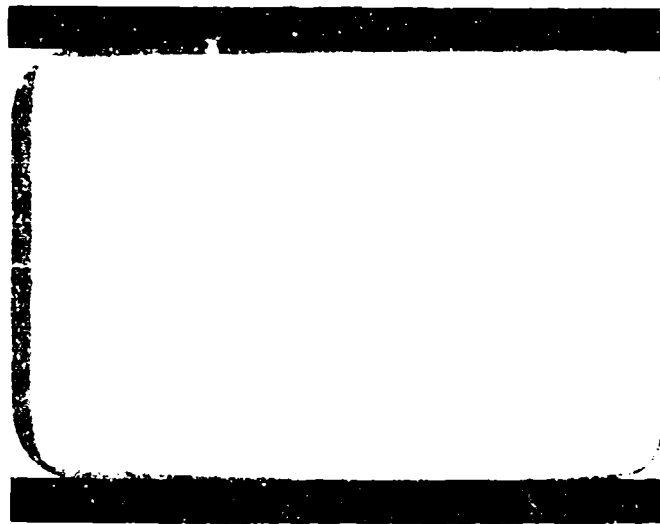


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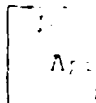


GENERAL DYNAMICS
Convair Division

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(1)

PNEUMATICS SYSTEM
AIRBORNE
DIFFICULTIES REVIEW

47

GENERAL DYNAMICS
Convair Division

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AIRBORNE AND GROUND SUPPORT SYSTEMS.

BOOK II.

GENERAL INFORMATION.

Volume IX.

Pneumatics System Airborne Difficulties
Review.

(12) 218 p.

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Chief of reliability Engineering

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BOOK II - DIFFICULTIES REVIEW - AIRBORNE CONTAINS THE FOLLOWING VOLUMES

VOLUME I	AIRFRAMES
*VOLUME II	ABORT SENSING AND IMPLEMENTATION SYSTEM
VOLUME III	AUTOPILOT
*VOLUME IV	AUXILIARY POWER SOURCE
VOLUME V	ELECTRICAL
*VOLUME VI	GUIDANCE
VOLUME VII	HYDRAULICS
VOLUME VIII	INSTRUMENTATION
VOLUME IX	PNEUMATICS
VOLUME X	PROPELLANT UTILIZATION
VOLUME XI	PROPULSION INTERFACE
VOLUME XII	PROPULSION
VOLUME XIII	RANGE SAFETY COMMAND

*VOLUMES II, IV AND VI UNDER ONE COVER.

GENERAL INFORMATION

The Difficulties Review encompasses problems gathered from the factory, the field, (ETR and WTR) and UTP. The factory difficulties are limited to "selloff" and rerun composite testing.

In the UTP area, the difficulties were excerpted from Central Test Control Reports, Problem Reports, Supplementary History Sheets and Problem Review Reports.

Field problems for the Difficulties Review have been limited to captive flights, flight readiness firings, actual countdown dual propellant loading, quad tanking, component reliability testing, and flight acceptance composite tests. Difficulties called out in the search for critical weakness program was not documented.

GSE problems shall be limited to ETR Complex 12, 13, 36A and 36B for the present edition. Hereafter only booster difficulties shall be maintained.

Failure analysis reports cover difficulties from the field and factory and may complement the information above.

The GSE Difficulties Review, Book 1 contains 14 Volumes, one volume for each system, under one cover. Each volume is appropriately indexed.

The Airborne Difficulties Review, Book 2 contains 13 volumes. Each volume is under separate cover except Volumes II, IV and VI. Volumes II, IV, and VI are under one cover because of the limited material contained in each volume. All volumes are appropriately indexed.

A guide to facilitate interpretation of data in the Difficulties Review (GSE and Airborne) is part of each book or volume.

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GENERAL DYNAMICS

Convair Division

Subject: Explanatory Information For Use of Difficulties Review (DR)
Data Tab Runs

This information has been prepared to facilitate use of the DR. It is not intended to describe how the DR was prepared nor the scope of the existing effort.

The Difficulties Review (DR) is presented on a form compatible with automated data processing and printout.

Appearing at the top of the page (outside of blocked-in areas) is the identification of the system and whether it is Airborne or Ground Support Equipment. Appearing with this identification is the date of the document and the page number.

On the right hand side outside of the blocked area, appears the abstract number. An abstract number is assigned to each item of the Difficulty Review to facilitate traceability to the original input document.

Appearing under the major identification are blocks wherein the information on component or system difficulty is identified and explained. Attached are samples of pages coded for reference to the following definitions and explanations:

CODE

EXPLANATION

①

This group of blocks callout system, subsystem, test/report number, failed component name, difficulty (Dif) data source, and GDC part number if applicable. Also called out here is the vehicle number, if applicable, and the date of difficulty.

In the same row, the site location, and in case of a flight, captive flight, or countdown, the time will be entered.

The block containing PRI and OTH refer to whether or not the failure is primary or a secondary failure. A secondary failure is to be interpreted as caused by another discrepancy.

The last block in this row is obvious and requires no further explanation:

②

Refers to a major system of the launch vehicle.

③

Refers to subsystem of a major vehicle system if applicable, (Booster, sustainer, etc).

GENERAL DYNAMICS

Convair Division

<u>CODE</u>	<u>EXPLANATION</u>
(4)	Is a report number as opposed to type of report, (UTP, Countdown, Flight, FAR, etc.).
(5)	Is a type of report, such as a FAR, UTP, FRF, etc.
(6)	Refers to a component part by name.
(7)	Is a component piece part of the component and referred to by name, (plug, seal, wiring, diode, etc., only where applicable).
(8)	Is a GDC part number, if applicable.
(9)	Refers to a site or location at time of discrepancy on the component or vehicle system.
(10)	Is the vehicle on which discrepancy occurred. Vehicle number listed only if unit was installed on a vehicle at time of discrepancy.
(11)	Is the vendor part number, if applicable.
(12)	Is the vendor name, if applicable.
(13)	Is the failure caused by other component or other system. This item defines the failure as secondary or not secondary.
(14)	Refers to the primary failure. If item is labeled <u>no</u> , then item (13) may appear as a <u>yes</u> . Should item (13) appear as a <u>yes</u> , then an abstract will have been written to identify the cause of failure affecting the component referred to in the Difficulty Review, Item 6. It should be noted that a multiple failure may be recorded in these blocks, (yes/yes), or if a failure did not occur, (no/no).
(15)	Defines the failure mode, and if identifiable, the cause is called out. A careful review of the failure mode is made to determine effect on system operation and vehicle effort.

GENERAL DYNAMICS
Convair Division

<u>CODE</u>	<u>EXPLANATION</u>
(16)	Defines the system effect. This effect is the result of the failure mode assigned to the component.
(17)	Defines the vehicle effect. This effect is a result of the failure mode and the result of the system effect. It should be noted that corrective action may be taken whether or not the failure was confirmed.
(18)	Lists the corrective action. Taken by GDC, the vendor, or both.

GENERAL DYNAMICS
CONVAIR DIVISION

17 JUL 1966

PAGE 8171

DIFFICULTIES REVIEW-HYDRAULIC SYSTEM-AIRBORNE

STATION SUB-STATION	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE 07/7	DATE TIME 01/7	PRI OTH	VENDOR NAME VENDOR PART NO
1	HYDRAULIC-A/B BOOSTER	UTP-PT1 RT-08888-1	041288	CONVAIR	YES VICKERS NO AA-00888-R-8A	087093
2		RTA3977 HYDRAULIC PUMP				087076
3						
4						
5						
6	HYDRAULIC-A/B BOOSTER	BLV-49-10-2897 HYDRAULIC PUMP/SEAL	FAR RT-08888-1	7128 041003	FACTORY YES VICKERS NO AA-00888-R-8A	088174
7						
8						
9						
10						
11						
12						
13						
14						
15	HYDRAULIC-A/B BOOSTER	BLV-49-10-2897-F BOOSTER HYDRAULIC PUMP/SEAL	FAR RT-08888-1	0073-01 040708	WTR YES AA-00888-R-8A	088466
16						
17						
18						
19						

CORRECTIVE ACTION-DEPT 141-3 TO PERFORM RETEST ON TWO (2) ADDITIONAL UNITS FROM LOT 13, TO DETERMINE LOT ACCEPTABILITY
177 AND PROVIDE COMPARISON DATE.

FAILURE MODE-OUT OF-SPECIFICATION. 8/M 408-0430. PEAK TRANSIENT PRESSURES WERE 4100 TO 4800 PSIG, ALLOWABLE IS 4000
PSIG. NO FLOW TO FULL FLOW TIME IS 0.137 SECONDS, ALLOWABLE TIME IS 0.08 SECONDS.

CORRECTIVE ACTION-SUBMIT ECP 1469 TO REVISE TEST REQUIREMENTS TO PRACTICAL LEVELS.

FAILURE MODE-LEAK-EXTERNAL-CONTINUOUS OIL SEEPAGE WAS OBSERVED DURING CHECKOUT. CAUSED BY DEFECTIVE SEAL AT PUMP TO
ANCE PRESSURE SENSING PORT.

CORRECTIVE ACTION-VENDOR REVIEWED STOCK OF O-RINGS AND INFORMED THEIR PERSONNEL OF CORRECT SEAL INSTALLATION PROCED
URES.

FAILURE MODE-LEAK EXTERNAL. PUMP WAS REPORTED LEAKING AFTER HOT FIRING TEST. CASE WAS OVERPRESSURIZED CAUSING DAMAG
E TO CASE COVER SEAL.

CORRECTIVE ACTION-NO CORRECTIVE ACTION RECOMMENDED SINCE DAMAGE OCCURRED DUE TO INADVERTENT OVERPRESSURIZATION OF
MC PUMP.

FAILURE MODE-LEAK EXTERNAL. 8/M 808-0866 FAILED TO MEET CASE DRAIN LEAKAGE REQUIREMENTS OF 0.0 GPM DURING PRT-127.
THIS UNIT ALSO FAILED TO MEET PEAK TRANSIENT PRESSURE REQUIREMENTS. REFER TO PPR-1203.

SYSTEM EFFECT-NONE.

1A

GENERAL DYNAMICS
CONVAIR DIVISION

15 FEB 1966 DIFFICULTIES REVIEW-HYDRAULIC SYSTEM-AIRBORNE PAGE 0002

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRJ OTH	VEHICLE NAME VEHICLE PART NO
CORRECTIVE ACTION-BOOSTER HYDRAULIC FILL AND BLEED PERFORMED.						
HYDRAULIC-A/B BOOSTER	PTA0367/P8-WO-01-QAC6	COMPOSITE-P8C/DPL	1310 318	NO	NO	099703
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. TEST WAS RUN WITHOUT BOOSTER HYDRAULICS BECAUSE BOOSTER PPU COULD NOT BE OPERATED REMOTELY. THIS WAS NOTED DURING AUTOPILOT FINAL CHECKS.						
SYSTEM EFFECT-OPERATION DOES NOT START.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-BOOSTER MPU HAND VALVE, MICROSWITCHES V3 AND V1 ADJUSTED TO MAKE WIPER CONTACT.						
HYDRAULIC-A/B BOOSTER	SDC/BKPS-048/01-401-00-39	FLIGHT	390 030701	8-1 -32.3	YES NO	099704
FAILURE MODE-LEAK. B1 HYDRAULIC ACCUMULATOR PRESSURE EXHIBITED NO PRESSURE DIFFERENCE DURING THE OIL EVACUATION SEQUENCE.						
SYSTEM EFFECT-POSSIBLE CONTAMINATION. ALTHOUGH THE FAILURE MODE INDICATED THE POSSIBILITY OF AIR IN THE BOOSTER HYDRAULIC SYSTEM, SYSTEM PERFORMANCE WAS SATISFACTORY.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE. THE POSSIBILITY OF CONTAMINATION WAS NOT CONFIRMED BY ANY OTHER TELEMETRY DATA.						
HYDRAULIC-A/B BOOSTER	SDC/BKPS-038/82-401-00-177	FLIGHT	1770 030803	8-2 2.3	NO NO	099705
FAILURE MODE-OUT OF TOLERANCE. BOOSTER HYD ACCUM. PRESS MEASUR. H33P AND H7D. PUMP OUTLET PRESS. MEASUR H33P INDICATED AN INITIAL NORMAL PRESS. RISE BUT TO A LOWER (3190 PSIA) THAN NORMAL (3300 PSIA) PEAK AT 2.3 SEC. THE PRESS. THEN DECAYED TO 8720 PSIA DURING NEXT 1.3 SEC. SPECIFIC CAUSE UNKNOWN BUT SYMPTOMATIC OF UNUSUALLY HEAVY DEMAND ON SYSTEM.						
SYSTEM EFFECT-OPERATION TOO LOW. BOOSTER HYDRAULIC PRESS. LOWER THAN NORMAL FOR A TIME PERIOD OF -8.3 SEC TO 1.8 SEC. NO ADVERSE EFFECT NOTED ON SYSTEM PERFORMANCE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
HYDRAULIC-A/B BOOSTER	10/C22M03-018-0A1087-/L4-TMO-01-71	COMPOSITE-P8C/DPL	7107 030410	2-4	YES NO	099706

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13 JUN 1980

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	DATE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B	69A4748 RISCOFF DISCONNECT, PNEUMATIC, SEA 27-08120-11	UTP-PET	640413	60/C	YES	B. M. MADLEY NO 10829-3	890137
FAILURE MODE - INTERNAL LEAK. FOLLOWING PROOF PRESSURE TEST, A PROOF CYCLE WAS ATTEMPTED WHEN THE UNIT WAS PRESSURIZED A GAS LEAK WAS NOTED. THE UNIT'S TEST PROCEDURE WAS VIOLATED WHEN CONNECTING UNDER PRESSURE WAS ATTEMPTED CAUSING SEAL DAMAGE. THE FAILURE WAS VERIFIED IN A SUBSEQUENT TEST.							
CORRECTIVE ACTION - STRICT OBSERVANCE OF THE TEST PROCEDURE WHICH PROHIBITS PRESSURIZING PRIOR TO 100 PERCENT CLOSURE. REFER TO ECP 3436 FOR CREATION OF THE DATA ELEVEN (-11) UNIT.							
PNEUMATIC-A/B	PR27A-4507 VALVE, MANUAL SHUTOFF	UTP-PET 27-08108-3	640411	60/C	YES	PEACOCK 31383-1M	890218
FAILURE MODE-OUT OF SPECIFICATION. THE TORQUE REQUIRED TO CLOSE THE VALVE WAS 18 IN-LBS. THE MINIMUM ALLOWABLE TORQUE IS 23 IN-LBS. CAUSE OF THE DISCREPANCY IS UNKNOWN. MINIMUM TORQUE OUT OF TOLERANCE CAN BE TOLERATED PROVIDING LEAK REQUIREMENTS ARE MET.							
CORRECTIVE ACTION-MORE REQUIRED SINCE NO LEAK PROBLEMS EXISTED.							
PNEUMATIC-A/B	FTAU89A/P3-402-00-05 SOLENOID OPERATED CHECK VALVE	COUNTDOWN	50	15	YES		897838
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. VALVES FAILED TO OPEN WHEN ATTEMPTING TO VENT TANKS. VALVES APPEARED TO BE OUT OF ADJUSTMENT.							
SYSTEM EFFECT-OPERATION DOES NOT START. VALVES FAILED TO OPEN WHEN ATTEMPTING TO VENT TANKS.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-3 SOLENOID OPERATED CHECK VALVES WERE REPLACED BETWEEN 3 JUNE AND 5 JUNE, 1959							
PNEUMATIC-A/B TANK PRESS	A-99-08-3175P MOORE ASSEMBLY-HEAT EXCHANGER HELIU 27-08218-3 IN SUPPLY	FAR	1930	FACTORY	YES	FLEXIBLE METAL MOORE MS491-3	890616
FAILURE MODE-EXTERNAL LEAKAGE. LEAK IN THE FLEXIBLE PORTION. CAUSED BY A TRANSVERSE FRACTURE FROM EXCESSIVE BENDING OF THE MOORE ASSEMBLY. BENDING MAY HAVE OCCURRED WHEN AN ATTEMPT WAS MADE TO INSTALL A-9 WHERE A-13 BELONGED. THE FRACTURE WAS CAUSED BY STRESS CONCENTRATIONS ON THE INNER AND OUTER SURFACE DEFECTS RESULTING FROM MANUFACTURING.							
CORRECTIVE ACTION-PER FAR LH-99-08-3778 FACTORY PERSONNEL WERE INSTRUCTED TO REVIEW METHODS OF MOORE INSTALLATION TO DETERMINE IF THE -9 IS STILL REQUIRED.							

GENERAL DYNAMICS
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PR1 OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	69A5-88 REGULATOR, LOX TANK PRESSURE	UTP-PET 87-00845-49	680321	60/C	YES	B.M. MADLEY 10704-47	0900221
FAILURE MODE-OUT OF SPECIFICATION REGULATOR ALLOWED THE TANK PRESSURE TO JUMP TO 34 PSIG LOCK-UP PRESSURE IS 31.7 P SIS DISCREPANCY WAS CAUSED BY A FAULTY POPPET.							
CORRECTIVE ACTION-NONE SINCE THE INTENT OF THE TEST WAS TO CHECK NEW DACRON DIAPHRAGMS. NO CORRECTIVE ACTION WAS MA DE. AN ADJUSTMENT ONLY, TO CONTINUE TESTING							
PNEUMATIC-A/B TANK PRESS	P4-TBN-06-9302 REGULATOR-GAS	COMPOSITE-PRO/DPL 680313	5302	ETB14	NO		0903378
FAILURE MODE-WHEN THE FUEL START TANK WAS VENTED IT APPARENTLY SPLANKED FUEL INTO THE PNEUMATIC PRESSURIZATION DUCT CONTAMINATING THE REG AND OTHER PLUMBING IN THE SYSTEM. INCIDENT RESOLVED TO BE CAUSED BY HOLDING PRESSURE IN THE S TART TANK FOR TOO LONG A PERIOD OF TIME.							
SYSTEM EFFECT-SYSTEM DISABLED DUE TO CONTAMINATION.							
VEHICLE EFFECT-TEST RESCHEDULED.							
CORRECTIVE ACTION-PROCEDURE CHANGED TO DISALLOW HOLDING PRESSURE IN START TANK FOR MORE THAN 30 SECONDS.							
PNEUMATIC-A/B TANK PRESS	P4-TBN-04-9302 VALVE-BOILOFF, SWITCH	COMPOSITE-PRO/DPL 68-80200-3	5302	ETB14	YES		0903600
FAILURE MODE-THE BOILOFF VALVE FAILED TO LOCK CLOSED UPON GOING TO SEQUENCE 3 PRESSURE. FAILURE WAS ATTRIBUTED TO B TICKING OF THE CONTROLLER POPPET DUE TO LOW TEMPERATURE CONDITIONS AT THE CONTROLLER.							
SYSTEM EFFECT-OPERATION DOES NOT START SEQUENCE 111 LOX TANK PRESSURE COULD NOT BE ACHIEVED.							
VEHICLE EFFECT-TEST RESCHEDULE.							
CORRECTIVE ACTION-OPEN-INVESTIGATION OF THERMAL ENVIRONMENT AND REACTION OF THE BOILOFF VALVE IS BEING CONDUCTED.							
PNEUMATIC-A/B TANK PRESS	P7A-5130 VALVE, RELIEF	UTP-PET 87-00104-13	680311	60/C	YES	B.M. MADLEY 10326-13	
FAILURE MODE-OUT OF SPECIFICATION. LEAKAGE WAS IN EXCESS OF THE ALLOWABLE. LEAKAGE OCCURRED ACROSS METAL SEAT OF PO PPE IN SECONDARY CONTROLLER. CAUSE IS UNKNOWN. LEAK WAS CONSIDERED INSIGNIFICANT AND WOULD CAUSE NO ADVERSE EFFECT.							

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GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE REPORTED.						
PNEUMATIC-A/B TANK PRESS	SLV-98-08-3249 SOLENOID SENSOR VALVE	FAR 27-81468-841	5302 640310	CX14	YES NO	60/C
FAILURE MODE-OUT OF SPECIFICATION. UNIT FAILED DURING SIMULTANEOUS LAUNCH DEMONSTRATION, PER PROCEDURE 89-92808. THE PCU WAS IN SEQUENCE 11 AND 20 SECONDS AFTER SWITCHING TO THE VENT MODE THE PCU SWITCHED EMERGENCY. THE BOILOFF VALVE CRACK AND RESEAT VALVES WERE OUT OF BAND.						
CORRECTIVE ACTION-FAILURE WAS CONFIRMED. THE BOILOFF VALVE RESEATED BELOW THE MINIMUM ALLOWABLE. 60/C REVIEWED WITH CO USED TO COMPRESS THE VALVE BELLOW PER 60/C DRAWING 27-81571, NOTE 4.2. SHOP AND INSPECTION ALERTED OF THE PROBLEM WHERE THE TOOL CONTACTS THE BELLOW. CORRECTIVE ACTION DOCUMENTED IN MEMO OF 3 MAY 1966 FROM THE CORRECTIVE ACTION CENTER.						
PNEUMATIC-A/B TANK PRESS	P4-TND-01-5302 VALVE-BOILOFF, SWITCH	COMPOSITE-J FACT 64-60200-5	5302 640309	ETR14 -134	YES NO	60/C
FAILURE MODE-PCU WENT TO EMERGENCY-PROBLEM WAS DETERMINED TO BE THE RESULT OF A CALLED POPPET SHAFT IN THE CONTROL AND A HIGH PICKUP POINT OF PRESSURE SWITCH 99 IN THE PCU. CALLED SHAFT WAS TRACED TO AN UNDER-SIZED CHUCK USED IN MANUFACTURING.						
SYSTEM EFFECT-OPERATION TOO LOW. LOX TANK PRESSURE TOO LOW.						
VEHICLE EFFECT-TEST DELAYED.						
CORRECTIVE ACTION-VENDOR CHECKED AND CORRECTED TOOLING TOLERANCES.						
PNEUMATIC-A/B TANK PRESS	PR69A-4748 VALVE RELIEF	UTP-PET 27-06104-11	640224	60/C	YES	B.H. HADLEY
FAILURE MODE-OUT OF SPECIFICATION. CRACKING AND RESEAT PRESSURES WERE OUT OF SPECIFICATION. THE VALVE CRACKED AT 64.7 PSIG AND RESEATED AT 64.2 PSIG CRACKING SHOULD OCCUR BETWEEN 68.5 AND 70.5. PSIG. RESEAT SHOULD TAKE PLACE AT 66.0 PSIG						
CORRECTIVE ACTION-NONE. INVESTIGATION FOUND A SYSTEM MALFUNCTION CAUSED THE REPORTED FAILURE. THE TEST SPECIMEN WAS RETURN SATISFACTORILY.						
PNEUMATIC-A/B TANK PRESS	374-B-60-18 REGULATOR-648	FLIGHT	303D 640210	ABREDA-1 1.8	YES NO	HADLEY
FAILURE MODE-LOX TANK ULLAGE PRESSURE DIPPED BELOW REG SET PRESSURE FROM 1.8 SECONDS UNTIL 3 SECONDS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-OPERATION TOO LOW-THIS ANOMALY IS NOT OF SIGNIFICANT MAGNITUDE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE PLANNED.						
PNEUMATIC-A/B TANK PRESS	LA-7ND-01-7114 VALVE-BOILOFF, SWITCH	COMPOSITE-FRD/DPL 99-60800-3	7114 680114	PALCE-4 NO	YES NO	
FAILURE MODE-FOLLOWING THE COMBAT SEQUENCE THE BOILOFF VALVE OPEN INDICATION WAS NOT RECEIVED. FAILURE DUE TO TEMPERATURE SENSITIVITY OF THE OPEN MICROSWITCH.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL IMPROPER INDICATION OF THE BOILOFF VALVE POSITION.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-ECP 3548 WAS PROPOSED BUT WAS REJECTED BY AF. NO FURTHER ACTION PLANNED.						
PNEUMATIC-A/B TANK PRESS	69A3007 VALVE ASSY. LOS BOILOFF	UTP-BUAL/PPT 99-60800-805	680114	CO/C	CO/C	
FAILURE MODE-OUT OF SPECIFICATION. MAXIMUM VALVE LEAKAGE DURING 2 AXIS VIBRATION WAS 1.640 (SCFM) D.O.B (SCFM) (SCFM) ALLOADED. A TRANSIENT LEAK CONDITION OCCURRED DURING THE TESTING. THE MEAN LEAKAGE RATE WAS BELOW THE ALLOWABLE (8 SCFM) FOR SINE-RANDOM A QUESTIONABLE CORRELATION BETWEEN ME AND AMP EXIST THE REPORTED CONDITION WAS ACCEPTABLE.						
CORRECTIVE ACTION-NONE FOR 99-60800 VALVE. ALT. RETEST AT SINE ONLY VIB. COST WOULD NOT BE JUSTIFIED IN RELATION-8 HIP TO SIGNIFICANCE OF THE ANOMALY.						
PNEUMATIC-A/B TANK PRESS	CT-99-08-090 FUEL PRESSURE REGULATOR, O RING	FAR 27-08246-31	2910 680100	FACTORY	YES B.H. MADLEY NO 10703-23	
FAILURE MODE-INTERNAL LEAKAGE. LEAKAGE FOUND DURING LEAK CHECK PORTION OF ECP 410.7. 1000 PSIG NITROGEN USED TO SIMULATE FUEL TANK ULLAGE. WAS PRESSURIZED TO RELIEF VALVE REPEAT PRESSURE. PRESSURE IN SIMULATED TANK ROSE TO REPEATEDLY CRACK AIRBORNE RELIEF VALVE.						
CORRECTIVE ACTION-CONFIRMED FAILURE. FIRST FAILURE OF A MANLEY REGULATOR IN THIS MODE. LEAKAGE CAUSED BY AN IMPROPER SHUTOFF VALVE SUBSEQUENTLY MANLEY P/N 10418 SCREEN WAS NOT SUFFICIENTLY TIGHTENED. A TORQUE REQUIREMENT FOR SCREEN P/N 10418 HAS BEEN MADE. REGULATORS ARE ALSO SCREENED BY VENDOR REPLACING DIAPHRAGM WITH IMPROVED MATERIAL. SEE ECP 3617.						

990393

990394

990311

990434

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3246 FLEXIBLE HOSE, FITTING	PAR 27-00210-3	03:222	FACTORY	YES NO	YES FLEXIBLE METAL MOSE H3-490	090307
FAILURE MODE-STRUCTURAL. DURING PET VIBRATION TEST 1-4179-12, THE BASE OF THE FLARE CRACKED. SERIAL NUMBER OF UNIT -NS 5501001. FAILURE WAS ATTRIBUTED TO FATIGUE AGGRAVATED BY THE COUGES AND DIMES FOUND AROUND THE FLARE.							
CORRECTIVE ACTION-NONE. PAR SLV-99-08-3845 SENT TO VENDOR INFORMING HIM OF ANALYSIS AND PAR SLV-99-08-3844 WAS SENT OF APPROPRIATE GO/C PERSONNEL INFORMING THEM OF THE RESULTS OF THIS ANALYSIS. NO FURTHER ACTION TAKEN AT THIS TIME.							
PNEUMATIC-A/B TANK PRESS	SLV-90-08-3249-P RISE-OFF DISCONNECT O-RING	PAR 27-00120-9	7115 051207	WTR	YES NO	YES ROYLYN MO 4488-1	090310
FAILURE MODE-EXTERNAL LEAK. LEAKAGE REPORTED PAST THE VALVE POPPET CAUSED BY POPPET O-RING BEING PARTIALLY OUT OF 1 IS GROOVE. CAUSE OF O-RING DISPLACEMENT IS UNKNOWN.							
CORRECTIVE ACTION-FAILURE CONFIRMED. GO/C ADVISED PERSONNEL TO INSURE PROPER USE OF RUBBER AGE CONTROL DECALS AND 7 O INSURE PROPER ASSEMBLY AND USE OF PROPER LUBRICANT. GO/C RECOMMENDED OTHER LINE UNITS BE SURVEYED FOR ADEQUACY. GO /C ALSO REQUESTED A LEAK TEST OF THE DISCONNECT BE PERFORMED IN THE PRESSURE PIT. DESIGN GROUP WAS REQUESTED TO INVE STIGATE THE SUITABILITY OF POLYURETHANE AS AN O-RING MATERIAL.							
PNEUMATIC-A/B TANK PRESS	60C/BKFS-068/A1-402-00-200 REGULATOR	FLIGHT 27-00249-3	2000 051128	A-1 1.2	YES NO	YES MADLEY	090308
FAILURE MODE-ERRATIC OPERATION. THE LOX TANK PRESSURE REGULATOR FAILED TO RESPOND TO A DROP IN ULLAGE PRESSURE AT 1 .8 SECONDS. PROPER RESPONSE WAS INDICATED AT 1.0 SECONDS AND THROUGH THE REMAINDER OF THE FLIGHT.							
SYSTEM EFFECT-OPERATION TOO LOW. IMPROPER REGULATOR OPERATION AT 1.2 SECONDS ALLOWED LOX TANK PRESSURE TO FALL BELOW THE SPECIFIED 23.8 PSIG UNTIL 1.0 SECONDS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	27A4481 HEAT EXCHANGER LINE ASSEMBLY	UTP-PET 27-00210-17	051108	GO/C	YES NO	YES FLEX METAL MOSE H3491-17	
FAILURE MODE-OUT OF SPECIFICATION. BRASS SHOWED POOR BRAZING AND WAS COCKED AT FITTING. ONE END OF THE TEST SPECIFIC N HAD BEEN BENT IN THE WRONG DIRECTION.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-MANUFACTURING DEFECT, VENDOR ERROR. REJECT LOT AND RETURN TO VENDOR.							890874
PNEUMATIC-A/B TANK PRESS	CT-99-08-089 PRESSURIZATION DUCT, BELLONS	FAR 7-75313-809	174D 851026	98A	YES	60/C NO	890499
FAILURE MODE-STRUCTURAL. BELLONS ON DUCT WERE FOUND TO BE CREASED.							
CORRECTIVE ACTION-THE CREASES IN THE DUCT WERE CAUSED BY THE VENDOR AND WERE NOT A RESULT OF MISHANDLING DURING INS TALLATION. FABRICATION OF THESE DUCTS TO BE THOROUGHLY MONITORED FOR WELD SCHEDULE, PROOF, AND TOTAL CONFORMANCE TO WELD SCHEDULE. 60/C TO REVIEW CONFIGURATION OF DUCTS.							
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3243-P MANUAL SHUTOFF VALVE, PIN	FAR 27-08108-3	650929	FACTORY	YES	PEACOCK NO 51383-1	890573
FAILURE MODE-OUT OF TOLERANCE. THE VALVE REPORTEDLY FAILED TO MEET THE REQUIREMENTS OF EOP 510.4. THE TORQUE TO CLO SE THE VALVE EXCEEDED THE MAXIMUM 90 INCH-POUNDS SPECIFIED. FAILURE WAS DUE TO THE DETENT PIN NOT DROPPING INTO REQU IRED POSITION TO LOCK THE VALVE, THE PIN FAILED TO DROP INTO PLACE DUE TO MISALIGNMENT.							
CORRECTIVE ACTION-FAILURE CONFIRMED. 60/C REQUESTED THAT VENDOR PARTS AND DRAWINGS BE REVIEWED AND TO INSURE NO D'M ENSTIONAL BUILDUP RESULTS IN OUT OF TOLERANCE CONDITIONS. ALSO REFER TO RAR SLV-99-08-3429.							
PNEUMATIC-A/B TANK PRESS	83-4MD-02-34 PNEUMATIC CONTROLLER	COMPOSITE-FRD/DPL	34D 850927	8-3	NO	NO	894929
FAILURE MODE-FAILED DURING OPERATION. COMMIT STOP GENERATED AT BUS 3 WHEN THE LOX TANK WAS NOT SEQUENCED TO FLIGHT PRESSURE.							
SYSTEM EFFECT-OPERATION TOO LOW.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-PNEUMATIC CONTROLLER RESET.							
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3241F PRESSURE REGULATOR-AIRBORNE FUEL TANK ANK	FAR 7 27-08102-37	5301 850917	ETR	YES	FLUIDGENICS YES PR43-6	893826
FAILURE MODE-OUT OF TOLERANCE. REGULATOR ALLOWED FUEL TANK ULLAGE PRESSURE SUDDENLY TO RISE 3 PSI INTO THE RELIEF V ALVE BAND OF 70.7 PSIG. CAUSE NOT KNOWN. WEAR PATTERNS WERE NOTED IN SENSITIVE AREAS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION TAKEN.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	69A3417.2 BOILOFF VALVE ASSEMBLY	UTP-SLT 85-00209-081	650914	60/C	YES	60/C	891086
FAILURE MODE-LEAK-EXTERNAL. DURING SLT Z-AXIS VIBRATION THE CONE SEAL LEAKAGE WAS ABOVE TOLERANCE. NO LEAKAGE WAS OBSERVED AFTER COMPLETION OF THE VIBRATION SNEEP. THE OUT-OF-TOLERANCE LEAKAGE IS ATTRIBUTED TO THE SLT VIBRATION ENVIRONMENT.							
CORRECTIVE ACTION- NO CORRECTIVE ACTION IS JUSTIFIED AS A RESULT OF MINOR LEAKAGE DURING SLT VIBRATION.							
PNEUMATIC-A/B TANK PRESS	85-4M3-01-34 HELIUM CHANGEOVER VALVE	COMPOSITE-PRD/DPL 340 850909	340 850909	8-3	YES	NO	894932
FAILURE MODE-OUT OF TOLERANCE. LOW TANK PRESSURE HELD AT 22.5-23.8 PSIG FOR 4.8 SECONDS AFTER COMMIT STOP. A DECREASE IN PRESSURE IS EXPECTED. THE CHANGEOVER VALVE STAYED OPEN FOR 2.8 SECONDS.							
SYSTEM EFFECT-OPERATION TOO LONG.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	SLV-A9-08-3242P PRESSURE RELIEF VALVE-AIRBORNE FUE L TANK	FAR 27-08104-9	7201 850909	FACTORY	YES	B.M. MADLEY NO 10326-9	893227
FAILURE MODE-EXTERNAL LEAKAGE. A BLOWING LEAK CAME FROM THE PRIMARY CONTROLLER SCREENED VENT PORTS DUE TO A DAMAGED DIAPHRAGM. AMOUNT LEAKED WAS NOT DETERMINED.							
CORRECTIVE ACTION-QUALITY CONTROL REQUESTED THAT VENDOR BE INFORMED OF THIS ANALYSIS AND BE REQUESTED TO TAKE ACTION TO INSURE DIAPHRAGMS ARE MANUFACTURED PROPERLY. GO/C SURVEYED BOTH THE FUEL AND LOX RELIEF VALVES USING THE SAME DIAPHRAGM TO REPLACE THE PRIMARY CONTROLLED DIAPHRAGMS. DESIGN CHANGED TO USE DACRON FABRIC IN PLACE OF THE GLASS FIBER FOR DIAPHRAGM REINFORCEMENT. REF. FAR SLV-A9-08-3028.							
PNEUMATIC-A/B TANK PRESS	60C/22M85-029-DA1080-7/LA-7NO-01-71 10 BOILOFF VALVE MICRO SWITCH	COMPOSITE-PRD/DPL 7110 850909	7110 850909	2-4	YES	NO	
FAILURE MODE-FAIL DURING OPERATION. FOLLOWING FIRST AND SECOND COMMIT SEQUENCES THE LAUNCH ANALYST PANEL DID NOT INDICATE A BOILOFF VALVE OPEN INDICATION. THIS WAS CAUSED BY A STUCK OR FROZEN MICRO SWITCH ON THE BOILOFF VALVE CLOSING SOLENOID.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-REPLACED THE BOILOFF VALVE SENSOR CONTROLLER.						999773
PNEUMATIC-A/B TANK PRESS	SLV-9D-08-3238P SOLENOID SENSOR VALVE-BOIL OFF VAL VE	FAR 27-81466-841	7110 650908	PALC 2-4 YES NO			994232
	FAILURE MODE-FAIL DURING OPERATION. VALVE POSITION SWITCH INDICATED VALVE WAS CLOSED WHEN IT WAS OPEN. CAUSE-MICROS WITH ELASTOMER PLUNGER SEAL BECAME STIFF DUE TO LOW TEMPERATURE, AND THE MICROSWITCH INTERNAL SPRING WAS NOT STRONG ENOUGH TO OVERCOME THE STIFF SEAL.						
	CORRECTIVE ACTION-RAR SLV-9D-08-3023 RECOMMENDED THAT MICROSWITCH AND SOLENOIDS NOW BEING USED BE REPLACED WITH ONE S COMPATIBLE WITH DESIGN TEMPERATURES.						995049
PNEUMATIC-A/B TANK PRESS	SLV-9D-08-3240P PRESSURE REGULATOR-AIRBORNE LOW TA NR	FAR 27-08101-45	650903	FACTORY YES FLUIDGENICS NO P242-12			
	FAILURE MODE-OUT OF TOLERANCE LEAKAGE FILL PRESSURE TOO LOW-29.65. MINIMUM PRESSURE ALLOWED IS 30.2 PLUS OR MINUS 0.3 PSIG.						
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. RAR SLV-9D-08-3027 RECOMMENDED THAT THE INSTRUMENTATION IN PRESSURE PIT 1 BE IMPROVED BY MAKING IT THE SAME AS THAT IN PRESSURE PIT 2. FOR OTHER NON CONFIRMED REJECTIONS OF THIS TYPE SEE FAR MC-49-08-3088, LV-49-08-3166, LV-49-08-3169, LV-99-08-3167, LV-99-08-3187, LV-99-08-3189, SLV-49-08-3184 AND SLV-A 9-08-3187.						998378
PNEUMATIC-A/P TANK PRESS	FR27C4722 DIFFERENTIAL SWITCH-PRESSURE	UTP-PET 27-08130-1	850902	60/C YES HYDRA-ELECTRIC NO 32018-1			
	FAILURE MODE-OUT OF TOLERANCE. OVERALL DIMENSIONS WERE OUT OF TOLERANCE.						
	CORRECTIVE ACTION-ALL SPECIMENS RETURNED TO VENDOR FOR REMARK. VENDOR DIRECTED TO OBSERVE TOLERANCES.						
PNEUMATIC-A/B TANK PRESS	9943417.8 BOILOFF VALVE ASSEMBLY	UTP-PET 95-80209-821	650825	60/C YES 60/C NO			
	FAILURE MODE-OUT OF TOLERANCE. DURING POST VIBRATION AXIS 1 PROOF CYCLE, THE BELLOW STROKE MEASURED LESS THAN THE ALLOWABLE 0.60-0.00+0.05 INCHES AT ZONES C7 AND C9-ALSO, THE RESEAT PRESSURE WAS 8.678-8.890 PSIG WITH 9.50 PSIG THE MINIMUM ALLOWABLE. BELLOW STROKE WAS APPARENTLY NOT CHECKED AT ALL POINTS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	DATE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-NONE. VALVE WORKED CORRECTLY WHEN REASSEMBLED.							091000
PNEUMATIC-A/B TANK PRESS	27A0004 HEAT EXCHANGER LINE ASSEMBLY	UTP-PET 27-00010-17	090913	00/C	YES FLEX METAL HOSE NO E	MS491-17	090900
FAILURE MODE-OUT OF SPECIFICATION. SPECIMEN MEASUREMENTS TWO DIMENSIONS WERE BELOW THE MINIMUM BY FOUR THOUSANDTHS INCH AND ONE WAS THIRTY FIVE THOUSANDTHS INCH BELOW TOLERANCE.							
CORRECTIVE ACTION-THE SMALL DIMENSIONAL DISCREPANCIES ARE CONSIDERED MINOR AND USABLE FOR TEST. REMAINDER OF LOT WILL BE INSPECTED AND REJECTED IF FOUND TO BE OUT-OF-TOLERANCE.							094031
PNEUMATIC-A/B TANK PRESS	SLV-A9-00-3037F PRESSURE RELIEF VALVE-DIAPHRAGM	FAR 27-00104-3	7110	FACTORY	YES B.H. MADLEY NO 10520-9		
FAILURE MODE-STRUCTURAL. VALVE DID NOT RELIEVE. SPECIFIED RELIEF PRESSURE IS 71.7 PSIG MAXIMUM. EXCESSIVE LEAKAGE CAUSE FROM CONTROLLER AT ALL PRESSURES. CAUSE WAS A RUPTURED PRIMARY CONTROLLER DIAPHRAGM.							
CORRECTIVE ACTION-PER FAR SLV-A9-00-3024 DATED 090925 VENDOR WAS NOTIFIED OF THIS ANALYSIS-DIAPHRAGM RUPTURE AT ONE OF FOUR TUCKERED CORNERS. POSSIBILITY OF A BAD BATCH OF DIAPHRAGMS WAS SUGGESTED.							091000
PNEUMATIC-A/B TANK PRESS	09A3417.2 BOILOFF VALVE ASSEMBLY	UTP-PRT 55-00009-021	090700	00/C	YES 00/C NO		
FAILURE MODE-LEAK-EXTERNAL. DURING PRT PROOF CYCLE A REPLACEMENT CONE AND SEAL ASSEMBLY LEAKED. ATTEMPTS AT RESCATING THE SEAL WERE NOT SUCCESSFUL IN REDUCING THE LEAKAGE. THE LEAKAGE WAS THE RESULT OF A DAMAGED VALVE SEAL.							
CORRECTIVE ACTION-THE PART WAS REJECTED AND REPLACED WITH A SATISFACTORY UNIT. NO DESIGN OR CORRECTIVE ACTION WAS REQUIRED.							
PNEUMATIC-A/B TANK PRESS	GOC/BKFB9-040/01-401-00-30	FLIGHT	290	2-1	YES 10		
FAILURE MODE-OUT OF EXPECTED TEST VALUE. THE LOX TANK ULLAGE PRESSURE TRANSDUCER EXHIBITED AN INCREASED RATE OF CHANGE OF DATA LEVELS BETWEEN 20 SECONDS AND 20 SECONDS FOLLOWED BY A RETURN TO NORMAL. POSSIBLE CAUSES ARE- (1) THE PNEUMATIC REGULATOR EXPERIENCED A SLIGHT SET POINT CHANGE, (2) THE SENSING LINE DISCONNECT LEAKED INTERNALLY FOR THE FIRST 20 SECONDS, (3) INTERNAL FRICTION IN THE REGULATOR.							
SYSTEM EFFECT-ERRATIC OPERATION. THE LOX TANK PRESSURE REGULATION WAS ERRATIC.							
VEHICLE EFFECT-NONE.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.							003001
PNEUMATIC-A/B TANK PRESS	AA85-0081/PS-48N-02-225 ORIFICE	COMPOSITE-FRD/DPL 27-08187-003	2250 850828	13 -140	YES NO		007520
FAILURE MODE-OUT OF SPECIFICATION. THE PROGRAM PRESSURE ORIFICE WAS TOO SMALL TO ALLOW SUFFICIENT GAS FLOW. SYSTEM EFFECT-OPERATION TOO LONG. THE PROGRAM PRESSURIZATION SYSTEM WAS LOW AND OUT OF SPECIFICATION. VEHICLE EFFECT-COUNTDOWN RESCHEDULED.							
CORRECTIVE ACTION-ORIFICE WAS ENLARGED. REFERENCE IN M089437.							
PNEUMATIC-A/B TANK PRESS	AA85-0081/PS-48N-01-225 ORIFICE	COMPOSITE-FRD/DPL 27-08187-003	2250 850823	13 -140	YES NO		007521
FAILURE MODE-OUT OF TOLERANCE. THE PROGRAM PRESSURE ORIFICE WAS TOO SMALL TO ALLOW SUFFICIENT GAS FLOW. SYSTEM EFFECT-OPERATION TOO LONG. VEHICLE EFFECT-COMPOSITE RESCHEDULED.							
CORRECTIVE ACTION-UNKNOWN. PROGRAM PRESSURE ORIFICE REPLACED REFERENCE IN M089433.							
PNEUMATIC-A/B TANK PRESS	GOC/ZMH83-020-DA1051-/P4-THO-01-71 09 BOILOFF VALVE CONTROLLER SENSOR	COMPOSITE-FRD/DPL 27-81448-841	7109 850617	2-4	YES NO		009012
FAILURE MODE-OUT OF TOLERANCE. THE OPERATING RANGE OF THE BOILOFF VALVE WAS GREATER THAN NORMAL. A CRACKING PRESSURE OF APPROXIMATELY 3.9 PSIG AND RESET PRESSURE OF APPROXIMATELY 4.3 PSIG WAS OBSERVED. NORMALLY THIS RANGE HAS A MAGNITUDE OF 0.5 PSIG. PROBLEM ATTRIBUTED TO CONTROLLER SENSOR. SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE SENSOR CONTROL TO THE BOILOFF VALVE WAS REPLACED. THERE WAS NO RECURRENCE OF THE PROBLEM AFTER REPLACEMENT.							
PNEUMATIC-A/B TANK PRESS	8LV-90-08-3235F SOLENOID SENSOR-BOIL OFF VALVE	FAR 27-81448-841	7109 850617	PALC 2-4	YES NO		
FAILURE MODE-OUT OF TOLERANCE. BOIL OFF VALVE REPEATED LOW. TESTS INDICATING IT WAS ALSO CRACKING TOO HIGH. CAUSE WAS AS A STICKING POPPET DUE TO A HEAVY BELLOW. ONE SIDE OF THE BELLOW WAS CONSIDERABLY THICKER THAN OTHER PORTIONS DUE TO INCOMPLETE CHEMICAL ETCHING. BELLOW SPRING RATE IS PROPORTIONAL TO THE CUBE OF THE THICKNESS.							

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						894119
CORRECTIVE ACTION-PER WEAR 7701-85 DATED 850830 THE VENDOR ADDED AN OPERATION REQUIRING A CHECK FOR UNIFORMITY OF MATERIAL THICKNESS WHEN ELECTROPOLISH IS USED TO GET THE PROPER SPRING RATE. ACTION REQUESTED BY BAR SLV-80-08-3021.						
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3236F SOLENOID SENSOR BELLOWS-BOIL OFF V 27-81371 ALVE	FAR	850815	FACTORY	YES NO	894230
FAILURE MODE-CONTAMINATION CAUSED EXTERNAL LEAKAGE. TWO SOLENOID SENSOR BELLOWS LEAKED FROM PIN HOLES CAUSED BY CORROSION, AND ONE LEAKED THRU INTERCONNECTED INCLUSION STRINGERS IN THE ADJUSTER POPPET. SIMILAR FAILURES ON DATES 850701 AND 850830.						
CORRECTIVE ACTION-PER BAR SKV-99-08-3023 607A REQUESTED THE BELLOWS HANDLING PROCEDURES AND PROCESSES BE EXAMINED TO ASSURE BELLOWS ARE NOT EXPOSED TO CORROSION ENVIRONMENTS. A PROPOSAL FOR A THIN ELECTROLESS NICKEL PLATE APPLIED TO ADJUSTER POPPETS TO SEAL ANY POTENTIAL INTERCONNECTED INCLUSION STRINGERS THROUGH THE THIN FLANGE WAS MADE. IT WAS DECIDED NOT TO NICKEL PLATE UNLESS ANOTHER SUCH FAILURE OCCURS.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3026F DIFFERENTIAL PRESSURE SWITCH	FAR	850310	DYESS	YES HYDRA ELECTRIC NO 32010-1	896737
FAILURE MODE-OUT OF TOLERANCE. SWITCH OPENED AT A PRESSURE LESS THAN THE REQUIRED 0.9 PLUS OR MINUS 0.3 PSID. CORROSION OF INTERNAL COMPONENTS INTERFERED WITH PRESSURE PLATE MOVEMENT REQUIRING A SMALLER PRESSURE TO OPEN THE SWITCH.						
CORRECTIVE ACTION-ECP 1020 OF MAY 31, 1982 HAD ANNOYED ALL INTERNAL SWITCH COMPONENTS TO ELIMINATE CORROSION.						
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3233P SOLENOID-BOIL OFF VALVE SENSOR	FAR	850303	FACTORY	NO IMC MAGNETICS NO 1350521	894114
FAILURE MODE-OUT OF TOLERANCE. RECEPTACLE WAS FOUND FREE TO ROTATE 330 DEGREES DURING ASSEMBLY BUILD UP. CAUSE WAS INSUFFICIENT ROLLING OF THE OUTER SHEL OVER THE RECEPTACLE. TESTS INDICATED THE LOOSE CAP DID NOT AFFECT SOLENOID OPERATION.						
CORRECTIVE ACTION-FAILURE CONFIRMED. BAR SLV-99-08-3017 DOCUMENTS THAT VENDOR WAS REQUESTED TO PREVENT RECURRENCE OF P LOOSE SOLENOID RECEPTACLE.						
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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF	SITE	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	27A4291 PNEUMATIC FLEX HEAT EXCHANGER LINE ASSEMBLY	U7P-PCT 27-00210-3	650304	GO/C	YES NO	FLEX METAL NOS E CO M4490	090079
FAILURE MODE-LEAK-EXTERNAL. THE TEST SPECIMENS LEAKED AS THE UNITS WERE BEING PRESSURIZED TOWARD 8000 PSIG DESIGN BURST PRESSURE. THE BURST TEST WAS THE LAST SCHEDULED TEST.							
CORRECTIVE ACTION-DESIGN CONSIDERED THE VIBRATION AND CYCLING IN EXCESS OF MISSILE USE. THE TEST LEAKAGE WAS DUE TO WEAPENING OF THE FLEXIBLE CONVOLUTION SECTIONS THROUGH THE VIBRATION TESTS. A DESIGN IMPROVEMENT ON THE CONVOLUTION AND RIGID TUBING CASES WILL BE INCORPORATED IN FUTURE LOTS.							
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3231P DUCT ASSEMBLY-LOX TANK ULLAGE PRES SURE	FAR 27-80203-803	650415	FACTORY	YES NO	MUO	094112
FAILURE MODE-STRUCTURAL. THREADS WERE STRIPPED ON BOTH VALVES OF THE THREADED CONNECTION USED TO JOIN TWO DUCTS. CAUSE WAS CROSS THREADING THE JOINT. THE SOFT ALUMINUM RING NUT IS PRONE TO STRIPPING.							
CORRECTIVE ACTION-FAILURE CONFIRMED. RAR SLV-99-08-3019 RECOMMENDED. ADD A HARD ANODIZE COATING ON THE RING NUT 27-80202-9 AND-17 TO PREVENT SEIZURE AND GALLING OF THE RING NUT AND THE MATING MALE THREADS AND TO PREVENT CROSS THREAD DAMAGE. CHANGE PLANNING CARD 27-80002-017 TO CORRECT AMBIGUITY IN THE LUBRICATION REQUIREMENT.							
PNEUMATIC-A/B TANK PRESS	SLV-49-08-3232F PRESSURE REGULATOR-AIRBORNE, FUEL TANK	FAR 27-00246-29	7108	FACTORY	YES NO	FLUIDGENICS P-243-6	094113
FAILURE MODE-CONTAMINATION. LEAKAGE FILL MAXIMUM PRESSURE OF 68.3 PSIG WAS EXCEEDED. CAUSE WAS RESTRICTION OF THE 3 TOP VALVE POPPET BY PIECES OF RUBBER BETWEEN THE VALVE POPPET SHAFT AND THE TEFLON GUIDE. RUBBER APPARENTLY ENTERED THE REGULATOR DURING ASSEMBLY AT THE VENDOR.							
CORRECTIVE ACTION-CONFIRMED BY FUNCTIONAL TESTING. VENDOR WILL CONTINUE TO VACUUM CAREFULLY AT REGULAR INTERVALS DU RING ASSEMBLY. VENDOR B.C. WAS CAUTIONED NOT TO RELAX IN THE 100 PERCENT INSPECTION BOTH BEFORE AND AFTER ASSEMBLY. ASSEMBLY PERSONNEL WERE REQUESTED TO REDUCE AMOUNT OF LUBRICANT USED ON THE O-RING AS MUCH AS IS FEASIBLE. AFFECTED PERSONNEL WERE CAUTIONED AND INSTRUCTED TO PREVENT OVER TIGHTENING OF SCREWS AND BOLTS. THIS DATA IS VENDORS ANSWER DATED 650825 TO NLR 7031-65.							
PNEUMATIC-A/B TANK PRESS	LV98-08-3227-F HELIUM CHANGE-OVER VALVE, POPPET	FAR 27-00116-11	2040	ETR	YES NO	ROBERT SHAW PU LTON 109482001	
FAILURE MODE-CONTAMINATION SUSPECTED. POPPET SPRING PRELOAD NUT WAS SCRATCHED AND SIDE OF POPPET WAS DENTED BY THE VENDOR AT VALVE ASSEMBLY. VALVE OPERATION WAS NOT AFFECTED. NO CONTAMINANTS WERE FOUND. UNIT WAS REJECTED AFTER IT WAS REMOVED FOR REPLACEMENT BY A 27-00116-17 VALVE.							

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GENERAL B /NICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
							094109
CORRECTIVE ACTION-CONFIRMED PRESENCE OF DENTS AND SCRATCHES. OPERATION OF VALVE ACCEPTABLE. ETR SITE PERSONNEL WERE NOTIFIED OF RESULTS OF THIS ANALYSIS.							
PNEUMATIC-A/B TANK PRESS	69A3417.3 BOILOFF VALVE	UTP-PRT 55-80209-821	650305	60/C	YES	60/C NO	091038
FAILURE MODE-OUT OF TOLERANCE. DURING PRT POST VIBRATION AXIS III PROOF CYCLE, THE MINIMUM RESEAT PRESSURE DROPPED TO 8.6 PSIG. THE MINIMUM ALLOWABLE IS 9.5 PSIG. FOUR BLOW DOWNS WERE MADE WITH THE RESEAT PRESSURE DROPPING FURTHER TO 8.0 PSIG.							
CORRECTIVE ACTION-ANALYSIS IS TO BE MADE UPON TEAR DOWN TO DETERMINE IF THE PROBLEM IS DUE TO A DESIGN WEARNESS OR FAULTY WORKMANSHIP.							
PNEUMATIC-A/B TANK PRESS	69A3417.3 BOILOFF VALVE.	UTP-PRT 5590209821	650304	60/C	YES	60/C NO	091052
FAILURE MODE-STRUCTURAL. DURING PRT VIBRATION TEST AXIS 2 SPOT WELD ON RIGHT HAND CONTROLLER MOUNTING BRACKET PULLED LOOSE. THERE WAS NO LEAKAGE CAUSED BY THE SEPARATION BUT THE SPOT WELD APPEARED SHALLOW.							
CORRECTIVE ACTION-THE UNIT WAS DISASSEMBLED AND INSPECTED. CROSS SECTIONS OF THE WELDS WERE MADE. IT WAS NOT REPORTED IF THE FAILURE WAS DUE TO DESIGN OR FAULTY WORKMANSHIP.							
PNEUMATIC-N/B TANK PRESS	BOILOFF VALVE ASSEMBLY	UTP-PRT 55-80209-821	650303	60/C	YES	60/C NO	093240
FAILURE MODE-LEAK-EXTERNAL. DURING PRT VIBRATION (2 AXIS), THE MEASURED LEAKAGE WAS 0.06 SCFM AT 62 CPS, 0.09 SCFM AT 100 CPS, 0.09 SCFM AT 180 CPS, 0.08 SCFM AT 300 CPS, 0.04 SCFM AT 700 CPS, 0.08 SCFM AT 1300 CPS. TWO LOCKWIRE LEAK AD SEALS WERE FOUND IN THE VALVE BUT OTHER DAMAGE WAS APPARENT. LEAK CHECK INDICATED NO DAMAGE TO THE LIP SEAL.							
CORRECTIVE ACTION-THE LOCKWIRE FAILURE IS OF NO CONSEQUENCE EXCEPT FOR POSSIBLE CONTAMINATION. SINCE THERE IS POSITIVE FLOW FROM THE VALVE, THE CHANCE OF VALVE CONTAMINATION IS REMOTE. INSPECTION WAS INFORMED OF THE FAILURE AND REQUESTED TO DELETE LEAD BEALS AND TO USE LOCKWIRE TWISTED INSTEAD.							
PNEUMATIC-A/B TANK PRESS	60/C-84P65-010/AS-408-00-301 MELIUM CHAMCOVER VALVE	COUNTDOWN	301-0 650302	AS	YES NO		
FAILURE MODE-CHAMCOVER VALVE FAILED TO OPERATE AT PRESCRIBED TIME. PNEUMATICS FAILED TO GO TO INTERNAL.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYS- SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	OIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-OPERATION DOES NOT START.						
VEHICLE EFFECT-COUNTDOWN ABORTED.						
CORRECTIVE ACTION-UNKNOWN FOR VALVE ITSELF PROPOSED CORRECTIVE ACTION FOR CONDITION HEREIN EXHIBITED IS REEPLINE MONITORING OF BOOSTER HELIUM BOTTLE PRESSURE DURING COUNTDOWN.						
PNEUMATIC-A/B TANK PRESS	60/C-BXFGS-010/A3-402-00-301 HELIUM CHANGEOVER VALVE	FLIGHT 27-08116-11	3010 850302	A-3 0	YES NO	
FAILURE MODE-FAILED TO OPERATE AT THE PRESCRIBED TIME. THE PNEUMATIC CHANGE OVER VALVE FAILED TO SWITCH TO INTERNAL PRESSURE.						
SYSTEM EFFECT-OPERATION TOO LOW. BOTH LOX AND FUEL TANK ULLAGE PRESSURES WERE LOW AND BULKHEAD REVERSAL PROBABLY RESULTED ALTHOUGH LOSS OF VEHICLE INTEGRITY DID NOT OCCUR PRIOR TO RETRO ROCKETS FIRE. AN EFFECT OF THE LOW PRESSURES WAS LOW PUMP INLET PRESSURES. PROPELLSION SYSTEM PERFORMANCE WAS NOT DEGRADED.						
VEHICLE EFFECT-NONE, HOWEVER, IT IS BELIEVED THAT THE BULKHEAD PARTIALLY REVERSED.						
CORRECTIVE ACTION-PARAMETERS DOCUMENTS 27-08013 AND 89-00703 REVISED TO MONITOR HELIUM BOTTLES PRESSURE (P1240P) AT TIME OF SWITCH TO INTERNAL. VALVE P/N 27-08116-11 REPLACED WITH P/N 27-08116-17 ON 33-0502-7 THROUGH -18, 27-0020-2 AND 27-0021-3.						
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3229F PNEUMATIC RISC OFF DISCONNECT COUP LING	FAR 27-08120-7	7114 850302	FACTORY	YES B.M. MADLEY NO 10829-3	
FAILURE MODE-CONTAMINATION. PIN HOLE ON THE MACHINED SHOULDER NEXT TO B-NUT LEAKED. ELONGATED STRINGS OF EXOGENOUS INCLUSIONS ENTRAPPED DURING RAW MATERIAL PROCESSING CAUSED THE FAILURE.						
CORRECTIVE ACTION-CONFIRMED. VENDOR WAS NOTIFIED OF THE RESULTS OF THIS ANALYSIS. REF. RAR SLV-99-08-3911.						
PNEUMATIC-A/B TANK PRESS	60A3417.3 BOILOFF VALVE ASSEMBLY	UTP-PRT 33-60209-921	650223	FACTORY	YES 60/C NO	
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. DURING CRYOGENIC GAS FLOW TEST, THE CRACKING PRESSURE EXCEEDED THE 11.0 PSIG SPECIFIED IN PARA 3.2.8. MEASURED PRESSURE WAS 11.0 TO 11.5 PSIG. A SLIGHT UPWARD DRIPT IN CRACKING PRESSURE HAS BEEN REPORTED ON SEVERAL CENTAUR BOOSTER SPLS.						
CORRECTIVE ACTION-THIS WAS NOT CONSIDERED TO BE A SIGNIFICANT PROBLEM BY DESIGN, AND NO IMMEDIATE CHANGE WAS PROPOSED.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/D TANK PRESS	SLV-98-08-3226F SOLENOID SENSOR, BOILOFF VALVE	FAR 27-61440-029	9301 650128	14	YES NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- THE SENSOR BECAME INOPERATIVE ALLOWING A CONTINUOUS VENT AS TANK PRESSURE WAS STEPPED FROM SEQUENCE 3 TO 2. VENTING OCCURRED AT 7.5 PSI. NO CONTINUOUS CRACKING OR REPEATING OCCURRED. VALVE STUCK DUE TO A BENT BELLOWS 27-61371-1. STICKING APPARENTLY CAUSED IT TO BEND FURTHER.</p>						
<p>CORRECTIVE ACTION-FAILURE CONFIRMED. 1. CONTAMINANT FACTORY AND INSPECTION PERSONNEL WERE NOTIFIED OF THIS FAILURE AND WERE REQUESTED TO TAKE NECESSARY CORRECTIVE ACTION TO PREVENT ITS RECURRENCE. ASSEMBLERS WERE CAUTIONED TO BE ALERT FOR BENT BELLOWS AND TO CALL INSPECTION IF ANY WERE FOUND. WHEN THE BELLOWS ARE SCREENED ONTO THE POPPET STEM, THEN EXCESSIVE RUN OUT CAN BE DETECTED BY BELLOWS MOBILE. 2. FAR SLV-98-08-3014 DOCUMENTS THIS ACTION.</p>						
PNEUMATIC-A/B TANK PRESS	A-99-08-3225F DUCT ASSEMBLY-RIGID-FUEL TANK PRESS 7-73420 SURE.	FAR 7-73420	5030 650128	FACTORY	YES NO	CALIFORNIA AVI TRON 7-73820-803
<p>FAILURE MODE-STRUCTURAL. RESULTING IN A BLOWING LEAK THRU A DEFECTIVE WELD WAS FOUND DURING A 60 PSI LEAK CHECK. WELD DEFECT WAS THE RESULT OF A DEFICIENT WELD SCHEDULE DURING DUCT FABRICATION BY VENDOR. DUCT WAS RECEIVED WITH THREE OTHERS ON THE SAME DATE.</p>						
<p>CORRECTIVE ACTION-CONFIRMED. THE THREE SUSPECT DUCTS WERE FOUND ON MISSILES IN STORAGE. PERSONNEL WERE NOTIFIED OF TESTING REQUIREMENTS WHEN THESE MISSILES ARE REMOVED FROM STORAGE. VENDOR REPLY TO WCAR-7343-63. RECEIVED ON DATE 65 0409. SAID-A REVIEW OF WELD SCHEDULES RESULTED IN IMPROVEMENT, AND THAT A 100 PERCENT FIT INSPECTION WILL BE MADE ON COMPONENTS PRIOR TO WELD, AND THAT PERSONNEL WERE INSTRUCTED IN MANDATORY REQUIREMENTS RELATIVE TO THESE DUCTS. REF -FAR A-99-08-3807.</p>						
PNEUMATIC-A/B TANK PRESS	SLV-98-08-3224F SOLENOID SENSOR-BOILOFF VALVE	FAR 69-80200-1	5301 650122	14	YES CONV AIR NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- DURING TANKING, PHASE 3, THE VALVE FAILED TO CLOSE, BUT THE CLOSED LIGHT INDICATION WAS RECEIVED ON THE PNEUMATIC PANEL. VENTING OCCURRED DOWN TO 7.5 PSI. DID NOT CRACK OR RESEAT. NO ELECTRICAL DISCREPANCIES FOUND. THE 27-61459-7 SOLENOID REMAINDER KEPT STUCK IN THE INTERMEDIATE POSITION BECAUSE IT'S GUIDE EARS WERE OFF CENTER 0.014 INCH.</p>						
<p>CORRECTIVE ACTION-NOT CONFIRMED- FOR FAIL TO CLOSE MODE. CONFIRMED- FOR SOLENOID STICKING IN INTERMEDIATE POSITION. 1. SURVEY 19-65 RELEASED 2/20/68 ASSURED THAT ALL 27-61459-7 SEALS WERE MADE TO DRAWING. THESE PARTS WERE TANKED IN THE SURVEY NUMBER 19-65. 2. ECP 1781 RI AND RI INCORPORATES 27-61459-9 REVISED GUIDE ON ALL MISSILES NOT FLOWN AS OF MARCH 1966. ONLY RETAINED DATA COMPLYING WITH ABOVE SURVEY ARE TO BE USED. 3. DOCUMENTED BY FAR SLV-98-08-3808.</p>						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	89A2143.4 LOX BOILOFF VALVE-MICRO SWITCH	UTP-SLT 69-80200-1	650122	60/C	YES	60/A	892370
FAILURE MODE-ERRATIC OPERATION. DURING POST AXIS III SLT VIBRATION PROOF CYCLE THE LOCKUP MODE MICRO SWITCH WOULD NOT REMAIN CLOSED WHEN POWER WAS REMOVED, GIVING MOMENTARY LIGHT INDICATION ONLY. REF. TASK HISTORY LOG NO. 642-7-040 - S/N 401-0014.							
CORRECTIVE ACTION-NONE. UNIT TESTED TO LEVELS IN EXCESS OF DESIGN REQUIREMENTS.							
PNEUMATIC-A/B TANK PRESS	89A2143.4 LOX BOILOFF VALVE	UTP-SLT 69-80200-1	650122	60/C	YES	60/C	892369
FAILURE MODE-OUT OF TOLERANCE. DURING POST AXIS III SLT VIBRATION PROOF CYCLE THE UNITA OPERATING PRESSURE SHIFTED TO A 6.2 TO 9.4 PSIG BAND. REQ. PRESSURE IS 4.7 TO 9.6 PSIG MAX. REF. TASK HISTORY LOG NO. 642-7-040. S/N 401-0014.							
CORRECTIVE ACTION-NONE. UNIT TESTED TO LEVELS IN EXCESS OF DESIGN REQUIREMENTS.							
PNEUMATIC-A/B TANK PRESS	89A2143.4 LOX TANK BOILOFF VALVE	COMPOSITE-F710/DPL 650121	5301	14	YES	60/C	892368
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. BOILOFF VALVE DID NOT CLOSE THE FIRST TIME UPON STEPPING TO FLIGHT PRESSURIZATION. UPON RESTEPPING FROM FLIGHT PRESSURIZATION TO SEQUENCE 2 THE VALVE DID NOT OPEN CORRECTLY.							
SYSTEM EFFECT-ERRATIC OPERATION. THE DESIRED TANK PRESSURES COULD NOT BE OBTAINED BY NORMAL METHODS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-REPLACED BOILOFF VALVE PER IR 948921 AND PR 0-515-50.							
PNEUMATIC-A/B TANK PRESS	89A2143.4 LOX BOILOFF VALVE-MICRO SWITCH	UTP-SLT 69-80200-1	650121	60/C	YES	60/A	892369
FAILURE MODE-FAIL DURING OPERATION. DURING THE ONE MINUTE POST SLT VIBRATION SNEEP EQUALIZATION THE LOCKUP MODE INDICATOR LIGHT FLICKERED FOR APPROXIMATELY 10 SEC. AND THEN WENT OUT COMPLETELY. THIS FAILURE WAS CAUSED BY THE MICRO SWITCH. REF. TASK HISTORY LOG NO. 642-7-038. S/N 401-0014.							
CORRECTIVE ACTION-NONE.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PR: OTH	VEHICLE NAME VEHICLE PART NO
PNEUMATIC-A/B TANK PRESS	89A143-A LOX BOILOFF VALVE-CONTROLLER BRACH 89-80200-1 ET	UTP-8LT 89-80200-1	830121	60/C	YES 60/A NO	992386
FAILURE MODE-STRUCTURAL. DURING THE 8LT AXIS III VIBRATION SWEEP THE CONTROLLER MOUNTING BRACKETS CRACKED. REF. 1AS A HISTORY LOG NO. 662-7-038. 3/N 401-0014.						
CORRECTIVE ACTION-NONE. UNIT TESTED TO LEVELS IN EXCESS OF DESIGN REQUIREMENTS.						
PNEUMATIC-A/B TANK PRESS	89A143-A LOX BOILOFF VALVE	UTP-8LT 89-80200-1	830121	60/C	YES 60/A NO	091731
FAILURE MODE-OUT OF TOLERANCE. DURING 8LT VIBRATION TEST ON AXIS III (V) THE CONE SEAL LEAKAGE EXCEEDED THE ALLOWABLE OF 0.03 SCFM OF GAS. SHORT TRANSIENTS OF 0.42 SCFM WERE NOTED JUST BEFORE THE LEAK. THE CANISTER BLEW OFF RESULTING IN ABOVE 125 CPS. REF. TASK HISTORY LOG NO. 662-7-038. 3/N 401-0014.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	AK85-0008/PA-78N-01-5301 VALVE-BOILOFF	COMPOSITE-PRD/DPL 89-80200-1	5301 830121	14	YES 60C NO	800386
FAILURE MODE-OUT OF TOLERANCE. THE BOILOFF VALVE DID NOT CLOSE WHEN TANK PRESSURE WAS STEPPED TO SEQUENCE III. UPON RESTEPPING PROPER OPERATION WAS NOTED. THEN WHEN RESTEPPING FROM SEQUENCE III BACK TO SEQUENCE II, ONLY A SMALL PLU ME WAS NOTED FROM THE TANK VENT AND THERE WAS NO INDICATION OF NORMAL VALVE CYCLING. PRELIMINARY FAILURE ANALYSIS INDICATED AN OUT OF TOLERANCE RETAINER SEAT IN THE VALVE.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. THE BOILOFF VALVE CONTINUED TO VENT WHEN TANK PRESSURE WAS STEPPED TO SEQUENCE III.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-VALVE WAS IRC AND RETURNED TO 80 FOR FAILURE ANALYSIS. (IR 980921)						
PNEUMATIC-A/B TANK PRESS	60A-AP265-00581-402-00-109 LOX TANK PRESSURE REGULATOR	FLIGHT	1820 830112	3708-1 1.8	YES NO	
FAILURE MODE-FAILED DURING OPERATION. LOX TANK PRESSURE REGULATOR HUNG OPEN MOMENTARILY AFTER OPENING IN RESPONSE TO NORMAL DEMANDS. NORMAL OPERATION RETURNED BY 3.1 SEC AFTER ENGINE IGNITION.						
SYSTEM EFFECT-OPERATION TOO HIGH MOMENTARILY. LOX TANK ULLAGE PRESSURE INCREASED FROM 23.8 TO 28.8 PSIG IN A TIME OF 0.6 SEC. NORMAL OPERATION RETURNED 0.6 SEC. LATER.						
EFFECT-NONE.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	RISE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	69A2143.4 LOE BOILOFF VALVE-SOLENOID COMMENT 69-80200-1 OR	UTP-PRT UTP-80200-1	650109	60/C	YES NO	YES 60/C
FAILURE MODE-STRUCTURAL. FOLLOWING PRT AXIS 11 VIBRATION TEST, THE SOLENOID A ELECTRICAL CONNECTOR WAS FOUND TO BE LOOSE IN ITS HOUSING. REF. TASK HISTORY LOG NO. 662-7-034, 8/N 401-0014.						
CORRECTIVE ACTION-NONE. CONTINUE TEST.						
PNEUMATIC-A/B TANK PRESS	69A2143.4 LOE BOILOFF VALVE	UTP-PRT 69-80200-1	950108	60/C	YES NO	YES 60/C
FAILURE MODE-OUT OF TOLERANCE. DURING THE MOST PRT AXIS 11 PROOF CYCLE THE CONE SEAL LEAKAGE WAS 0.035 SCFM OF 642. REQ. IS 0.030 SCFM MAX. REF. TASK HISTORY LOG NO. 662-7-034, 8/N 401-0014.						
CORRECTIVE ACTION-NONE. CONTINUE TEST.						
PNEUMATIC-A/B TANK PRESS	69A2143.4 LOE BOILOFF VALVE	UTP-PRT 69-80200-1	650108	60/C	YES NO	YES 60/A
FAILURE MODE-OUT OF TOLERANCE. DURING PRT VIBRATION SHEEP IN Z-AXIS, THE CONE SEAL OCCASIONALLY OPENED SLIGHTLY ALL OWING EXCESSIVE LEAKAGE TO GREATER THAN 0.159 SCFM. AT THE END OF THE VIBRATION SHEEP THE CONE SEAL LEAKAGE WAS ZERO . REQ. IS 0.03 SCFM MAX. REF. TASK HISTORY LOG NO. 662-7-033, 8/N 401-0014.						
CORRECTIVE ACTION-MONT. CONTINUE TEST.						
PNEUMATIC-A/B TANK PRESS	SLV-90-08-3221F RISE OFF DISCONNECT HALF-LOX TANK PRESSURE DUCT	FAR 27-08128-9	7107	WTR	YES NO	YES ROVLYM NO 4488-1
FAILURE MODE-FAILED DURING OPERATION. POPPET STUCK OPEN WHEN IT WAS MANUALLY PUSHED IN WITH A HAMMER HANDLE. FOR UL LAGE LINE PRESSURE RELIEF, BOTH THE POPPET PROBE AND THE BORE ARE TAPERED. THE POPPET STUCK BECAUSE PROBE WAS ABOVE MAXIMUM ALLOWABLE OUTSIDE DIAMETER AND THE BORE WAS BELOW MINIMUM INSIDE DIAMETER. THE POPPET WAS PUSHED IN BEYOND N ORNAL TRAVEL DISTANCE.						
CORRECTIVE ACTION-CONTINUED. EFFECTIVE ON DATE 690210, VENDOR IS USING A SIMS GAGE ON ALL UNITS TO PREVENT ABUSE OF OUT OF TOLERANCE PARTS. 60/A SURVEY 1-88 WAS ISSUED ON DATE 690204 TO TEST ALL UNITS IN STOCK AND ON MISSED FOR 8						

693918

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
							092333
INJING. CENTAUR BOOSTERS ARE INCLUDED. REVISION T TO 27-93782 DATED MAY 14, 1963 RESEQUENCED THE INSTALLATION OF UPPER AND LOWER DYNAMIC JUMPER UNIT THUS ENABLING SATISFACTORY PRESSURE RELIEF IN THE FUEL AND LOX LINES.							
PNEUMATIC-A/B TANK PRESS	LV-A9-08-3222F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	196D 841210	FACTORY	YES HYDRA ELECTRIC NO 32018-1		092332
FAILURE MODE-CONTAMINATION. DURING FINAL CHECKOUT THE SWITCH ACTUATED AT A DIFFERENTIAL PRESSURE OF 0.5 PSID. SPECIFIED RANGE IS 0.5 PLUS OR MINUS 0.5 PSID. CAUSE WAS CORROSION FROM A CLEANING RESIDUE ON THE LOX SIDE OF THE SWITCH AND ALSO FROM SHOE TO SCREW THREAD FRICTION ON THE FUEL SIDE OF THE SWITCH.							
CORRECTIVE ACTION-COMPLETED. AS OF JULY 1964 ALCOHOL IS USED FOR FINAL RINSE PER MEMO DATED 640808, SEP 7600 PROPOSED A DESIGN CHANGE TO ELIMINATE THE FRICTION PROBLEM. CHANGE WAS NOT APPROVED.							
PNEUMATIC-A/B TANK PRESS	69A2143-3 LOX BOILOFF VALVE	UTP-PRT 69-80200-1	841218	60/C	YES 60/A NO		092364
FAILURE MODE-LEAK EXTERNAL. DURING POST PRT VIBRATION PROOF CYCLE LEAKAGE MEASURED AROUND THE BRACKET AREA WAS 900 CC/MIN. OF GHE. REG. IS ZERO LEAKAGE. REF. TANK HISTORY LOG NO. 942-7-028. 8/N 401-0019.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	69A2143.4 LOX BOILOFF VALVE-SOLENOID	UTP-PRT 69-80200-3	841217	60/C	YES 60/C NO		092382
FAILURE MODE-OUT OF TOLERANCE. DURING PRT CRYOGENIC GAS FLOW TEST THE UNIT FAILED WHEN THE SHUTOFF AND RELIEF SOLENOID CURRENTS EXCEEDED THE REQUIRED 1.00 AMP. MAX. THE CURRENTS FOR SHUTOFF WERE 2.00 AMP -255 VDC AND THE CURRENTS FOR RELIEF WERE 2.00 AMP -25.6 VDC. THE COLDEST SKIN TEMPERATURES ON THE SOLENOID AND SENSOR WERE -23 DEGREES F AND -100 DEGREES F RESPECTIVELY. REF. TANK HISTORY LOG NO. 942-7-024. 8/N 401-0014.							
CORRECTIVE ACTION-NONE. THE REG. 1.00 AMP IS GIVEN AT A TEMPERATURE OF 70 DEGREE F.							
PNEUMATIC-A/B TANK PRESS	69A3417.3 BOILOFF VALVE ASSEMBLY	UTP-BLT 95-00209-021	841217	60/C	YES 60/C NO		092389
FAILURE MODE-STRUCTURAL. HELD FAILURE NOTED AFTER COMPLETION OF AXIS 1 BLT VIBRATION SHEEP WHILE MINOR LEAKAGE OCCURRED. REPAIR FUNCTION FOR THE DESIGN LEVEL STRUCTURAL INTEGRITY WAS AFFECTED.							
CORRECTIVE ACTION-PERFORM A TANK DOWN INSPECTION. MAKE A CROSS-SECTION ETCN OF THE FAILED AREA.							

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE OF TIME DIP	SITE DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	27A3888 MANUAL SHUTOFF VALVE	UTP-PRT 27-03108-1	841217	60/C	YES NO	PE/COCK NO 51380-1L	990947
FAILURE MODE-OUT OF TOLERANCE. WHEN VALVE BUTTERFLY IS TURNED FROM OPEN TO CLOSED POSITION, A TORQUE OF 150 IN-POUNDS WAS REQUIRED FOR LOCK TO FALL IN. (SPEC 25 TO 90 IN-POUNDS). S/N 308-0710, T.M. NO. 5, P 3022-847.							
CORRECTIVE ACTION-RECOMMEND USE OF PROPER TYPE OF TORQUE WRENCHES IN ACCORDANCE WITH SPEC WPB 28.19A AND WS 24.02B. CARR F5022 SC-2, PRR 854-2-063.							
PNEUMATIC-A/D TANK PRESS	89A2145.3 LOE BOILOFF VALVE-SOLENOID	UTP-PRT 89-80200-1	841218	60/C	YES NO	CO/A	992373
FAILURE MODE-OUT OF TOLERANCE. DURING PRT CRYOGENIC GAS FLOW TEST THE UNIT FAILED WHEN A CURRENT OF 2.20A AT 25.4 V DC WAS REQUIRED TO OPERATE THE SOLENOID FOR PUTTING THE UNIT IN THE RELIEF MODE. REQUIREMENT 1.90A-24 TO 29 VDC MAX. REF. TASK HISTORY LOG NO. 882-7-022, S/N 401-0013.							
CORRECTIVE ACTION-NONE. THE REG. 1.00 AMP IS GIVEN AT A TEMPERATURE OF 78 DEGREE F AND IS NOT REALISTIC FOR THE -15 DEGREE F SEEN IN THE TEST, THEREFORE THE 2.2 AMP. IS THE MORE REALISTIC CURRENT CAUSED BY COIL RESISTANCE CHANGE DUE TO COLD TEMPERATURE.							
PNEUMATIC-A/B TANK PRESS	89A3417.1 BOILOFF VALVE ASSY	UTP-SLT 59-80200-821	841218	60/C	YES NO	CO/C	991047
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. DURING PERFORMANCE OF STEP 4.7 OF THE SLT POST VIBRATION TEST (AXIS 11). THE RESEAT PRESSURE WAS BELOW THE ALLOWABLE VALUE OF 9.8 PSIG. MEASURED VALUES WERE 9.4 AND 9.3 PSIG. THIS DOWNWARD SHIFT OF RESEAT PRESSURE IS ATTRIBUTED TO EXTENSIVE TESTING OF THIS UNIT.							
CORRECTIVE ACTION-NONE. THIS IS A MINOR OUT-OF-TOLERANCE VALUE DUE TO EXTENSIVE TESTING.							
PNEUMATIC-A/B TANK PRESS	89-3417 BOILOFF VALVE ASSY	UTP-SLT 59-80200-821	841214	60/C	YES NO	CO/C	992000
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. DURING SLT VIBRATION TEST AXIS 111 EXCESSIVE CONE SEAL LEAKAGE OCCURRED. THE CAUSE WAS NOT DETERMINED. VIBRATION ENVIRONMENT OBVIOUSLY CONTRIBUTED TO CONDITION. THERE WAS NO CONE SEAL LEAKAGE BEFORE AND AFTER THE VIBRATION SLEEP.							
CORRECTIVE ACTION-UNIT TO BE CHECKED IN A TEAR DOWN INSPECTION AT THE COMPLETION OF TEST.							
							992000

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	60/A-BK284-043/P8-LO-03-0454 LOX TANK RELIEF VALVE	FLIGHT	1480 041211	384 100	YES NO	894787
FAILURE MODE-FAIL TO CEASE OPERATION AT PRESCRIBED TIME. LOX TANK RELIEF VALVE FAILED TO RESEAT PROPERLY AND CONTINUED VENTING FROM 160 SECONDS ON. MOST PROBABLE CAUSE IS CONSIDERED TO BE FREEZING OF A RUBBER BELLONS IN THE VALVE IN A PARTIALLY OPEN POSITION.						
SYSTEM EFFECT-NONE. LOX TANK PRESSURE WAS SUFFICIENT DURING POWERED FLIGHT.						
VEHICLE EFFECT-NONE. THE SMALL COUNTERCLOCKWISE ROLL ACCELERATION IMPARTED TO THE VEHICLE WAS NOT DETRIMENTAL TO THE FLIGHT.						
CORRECTIVE ACTION-NONE. REFERENCE-PROBLEM NUMBER 3 OF FLIGHT PROBLEM REPORT 884-5-93-1.						
PNEUMATIC-A/B TANK PRESS	603417 BOILOFF VALVE ASSY	UTP-PRT 55-80209-821	041209	60/C	YES 60/C NO	892018
FAILURE MODE-OUT OF TOLERANCE. DURING PRT VIBRATION AXIS III THE CONE SEAL LEAKAGE RATES WERE OUT OF TOLERANCE 10.0 3 SCFM GAC OR 0.00 SCFM HEI. THE CAUSE WAS VIBRATION.						
CORRECTIVE ACTION-NO FORMAL CORRECTIVE ACTION. OBSERVE PERFORMANCE THRU TESTING AND MAKE TEAR DOWN INSPECTION AFTER TEST.						
PNEUMATIC-A/B TANK PRESS	60A3117.2 BOILOFF VALVE ASSEMBLY	UTP-PRT 55-80209-821	041209	60/C	YES 60/A NO	891080
FAILURE MODE-OUT OF TOLERANCE. DURING POST CRYOGENIC GAS FLOW TEST, THE BELLONS STROKE BECAME LESS THAN THE REQUIRE D 0.00+0.03-0.00 INCHES. THE SAFETY WIRE AT CONE LOCKNUT BROKE AND THE ENTIRE CONE ASSY UNSCREWED 135 DEGREES. THIS FAILURE WAS ASSUMED TO BE CAUSED BY NOT TIGHTENING THE LOCKNUT SUFFICIENTLY SO THAT LOAD WAS PARTIALLY TRANSFERRED TO THE SAFETY WIRE						
CORRECTIVE ACTION-CHANGE EOP 310.7 TO SPECIFICALLY TIGHTEN LOCK NUT TO 40-80 FOOT POUNDS TORQUE.						
PNEUMATIC-A/B TANK PRESS	60A3117.2 BOILOFF VALVE ASSEMBLY SOLENOID	UTP-PRT 55-80209-821	041207	60/C	YES 60/C NO	
FAILURE MODE-OUT OF TOLERANCE. DURING CRYOGENIC GAS FLOW TEST AFTER PRESSURE PROOF CYCLE, THE SOLENOID CURRENT WAS 8.15 AMP. THE MAXIMUM ALLOWABLE IS 1.8 AMP. THIS WAS CAUSED BY THE CRYOGENIC TEMPERATURES LOWERING THE COIL RESISTANCE AND THEREFORE INCREASING THE CURRENT.						

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CORRECTIVE ACTION-DESIGN GROUP TO PROCESS A DRAWING CHANGE TO CLARIFY TEMPERATURE REQUIREMENTS FOR SOLENOID CURRENT DRAIN.							093091
PNEUMATIC-A/B TANK PRESS	99A3417.1 BOILOFF VALVE ASSEMBLY SOLENOID	UTP-PRT 99-80209-081	841704	60/C	YES	60/C NO	093270
FAILURE MODE-OUT OF TOLERANCE. SOLENOID CURRENT WAS 2.2 AMP AT 25.8 VOLTS DC. ALLOWABLE VALUE IS 1.8 AMPS. CRACKING PRESSURE ROSE TO 11.35 PSIG FROM AN ALLOWABLE 11.0 PSIG. CAUSE WAS HIGH CURRENT DUE TO LOW SOLENOID TEMPERATURE.							
CORRECTIVE ACTION-DESIGN GROUP TO PREPARE A DRAWING CHANGE TO CLARIFY TEMPERATURE REQUIREMENTS FOR SOLENOID CURRENT DRAIN AND FULL FLOW PRESSURE REQUIREMENTS.							
PNEUMATIC-A/B TANK PRESS	89A2143.3 LOE BOILOFF VALVE	UTP-PAT 89-80200-1	841125	60/C	YES	60/A NO	092561
FAILURE MODE-EXTERNAL LEAK. DURING THE PAT VIBRATION TEST THE UNIT HAD LEAKAGE OF 0.05 TO 0.075 SCFM GME. REG. IS 0.05 SCFM MAX. REF. TASK HISTORY LOG NO. 842-7-014. S/M 401-0013.							
CORRECTIVE ACTION-CONE AND SEAL ASSEMBLY P/N 27-80750-27 REJECTED AND REPLACED WITH A NEW PART. POST FLIGHT TEST PR OUT CYCLE TO BE REPEATED TO DETERMINE IF OUT OF TOLERANCE CONDITION STILL EXISTS.							
PNEUMATIC-A/B TANK PRESS	89A2143.3 LOE BOILOFF VALVE	UTP-PRT 89-80200-1	841125	60/C	YES	60/A NO	092360
FAILURE MODE-EXTERNAL LEAK. DURING INITIAL PROOF CYCLE THE UNIT HAD AN EXCESSIVE LEAKAGE RATE OF 0.0338 SCFM OF GME. REG. IS 0.03 SCFM MAX. REF. TASK HISTORY LOG. NO. 842-7-015. S/M 401-0013.							
CORRECTIVE ACTION-TEST CONTINUED.							
PNEUMATIC-A/B TANK PRESS	81-4MO-03-300 BOIL-OFF VALVE	COMPOSITE-PRD/DPL 3000	AB	NO	NO		093302
FAILURE MODE-PREMATURE OPERATION. THE BOIL-OFF VALVE OPERATED DURING FUEL LOAD DUE TO IMPROPER CONFIGURATION OF THE ENGINE START TANKS PRESSURIZE SOLENOID.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-COMPOSITE DELAY.							
CORRECTIVE ACTION-SYSTEM POWER WAS CYCLED TO DE-ENERGIZE THE SOLENOID.							

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PNEUMATIC-A/B TANK PRESS	69-2417 BOILOFF VALVE ASSEMBLY	UTP-PCT 39-80200-821	641117	60/C	YES	60/C NO
FAILURE MODE-OUT OF TOLERANCE. THE BOILOFF VALVE BELLOWS STROKE IN ZONE C6 AREA EXCEEDED THE TOLERANCE OF 0.00-0.00 +0.05 INCHES DURING 1AT PROOF CYCLE. OTHER PERFORMANCE WAS SATISFACTORY.						
CORRECTIVE ACTION-NO FORMAL CORRECTIVE ACTION IS RECOMMENDED. THE PROPER INSPECTION PERSONNEL ARE TO BE NOTIFIED BY DESIGN.						
PNEUMATIC-A/B TANK PRESS	69A3092 LOX TANK PRESSURE RELIEF VALVE	UTP-PET 27-06103-19	641116	60/C	YES	MADLEY NO 10325-19
FAILURE MODE-OUT OF TOLERANCE. DURING POOT LIFE PROOF CYCLE, THE VALVE REHEATED AT 31.8 PSIG, WHICH WAS BELOW THE M INIMUM ALLOWABLE OF 32.1 PSIG. REF. 8/N 409-1043, T.N. NO.1, LOT NO.3.						
CORRECTIVE ACTION-THE ANOMALY COULD NOT BE REPEATED.						
PNEUMATIC-A/B TANK PRESS	60C/ZZH64-041-0A1033-7LA-7ND-01-71 COMPOSITE-FRD/DPL 05 AIRBORNE HELIUM BOTTLES	7105 2-4 641113	NO	NO		
FAILURE MODE-OUT OF TOLERANCE. UNUSUAL AIRBORNE HELIUM BOTTLE PRESSURE TREND RESULTED FROM CHILLING THE BOTTLES FAR TER THAN THEY ARE BEING CHARGED. HELIUM LOAD VALVE (NO) STATED OPEN DURING THIS DEVIATION.						
SYSTEM EFFECT-ERRATIC OPERATION. HELIUM BOTTLE PRESSURES DECAYED FROM 3030 PSIG TO 2900 AND THEN RECOVERED AFTER A 2 MINUTE DEVIATION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	62-49-06-3210F SOLENOID VALVE, POPPET	FAR 27-00764-1	2980 641113	FACTORY	YES NO	
FAILURE MODE-EXTERNAL LEAKAGE. LEAKED 30 SCIN OUT VENT PORT AT 8 PSIG WHEN VALVE IS IN THE SHUTOFF POSITION. ALLOWA BLE LEAKAGE IS 11 SCIN. POPPET WAS BENT AND POPPET SEALS WERE WORN AND SCRATCHED. EXACT CAUSE OF FAILURE NOT KNOWN.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. FAR WAS DISTRIBUTED TO INTERESTED PERSONNEL. FURTHER ANALYSIS WAIVERED OF COMPONENTS FOR THE FIVE M1A5-2808 MISSILES, UNLESS FURTHER JUSTIFIED.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OIM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	89F2143-4 LOZ BOILOFF VALVE	UTP-PRT 89-80200-1	841108	60/C	YES	60/A NO
FAILURE MODE-EXTERNAL LEAK. DURING PRT VIBRATION SHEEP THE UNITS LEAKAGE RATE WAS GREATER THAN THE 0.03 SCFM ALLOWED. EXCESSIVE LEAKAGE OCCURRED AT A VIBRATION FREQUENCY BETWEEN 120 TO 180 CPS WHEN THE LEAKAGE RATE OF ONE WAS BETWEEN 180 TO 240 SCFM. REF. TASK HISTORY LOG NO. 882-7-003. B/N 401-0014.						
CORRECTIVE ACTION-TEST CONTINUED.						
PNEUMATIC-A/B TANK PRESS	89A3417-1 BOILOFF VALVE ASSY CONNECTOR	UTP-PRT 89-80200-821	841108	60/C	YES	60/C NO SAME
FAILURE MODE-STRUCTURAL. CONNECTOR ADAPTER WAS LOOSE DURING EXAMINATION OF PRODUCT. POOR WORKMANSHIP WAS EVIDENT. POSSIBLE LOOSE SOLENOID COIL TO BE INVESTIGATED BECAUSE PART NO. 1 FAILED DURING BLT DUE TO BROKEN SOLENOID LEAD WIRE.						
CORRECTIVE ACTION-THE SOLENOID VENDORS DRAWINGS AND JUMP PRACTICE WAS REVIEWED. ALL SIMILAR PARTS ON HAND WERE SURVEYED AND THOSE WITH LOOSE ADAPTERS WERE REMOVED AND SCRAPPED.						
PNEUMATIC-A/B TANK PRESS	89A2143-3 LOZ BOILOFF VALVE-SOLENOID CONNECT OR	UTP-PRT 89-80200-1	841108	60/C	YES	60/A NO
FAILURE MODE-OUT OF SPECIFICATION. DURING INITIAL EXAMINATION OF PRODUCT THE UNIT WAS CLASSIFIED AS A FAILURE BECAUSE THE ELECTRICAL CONNECTOR FOR SOLENOID A WAS SLIGHTLY LOOSE IN ITS HOUSING. IT WAS DECIDED THAT THE SOLENOID MUST BE TIGHT BECAUSE OF A PREVIOUS FAILURE ON ANOTHER UNIT. REF. TASK HISTORY LOG NO. 882-7-001. B/N 401-0013.						
CORRECTIVE ACTION-DESIGN GROUP WILL INVESTIGATE THE VENDORS DETAIL PRINTS AND PROCESSES OF SECURING THIS COIL IN THE HOUSING SINCE THE LOOSE ADAPTER IS UNDESIRABLE. ALSO RECOMMEND SURVEY INSTRUCTION FOR UNITS ALREADY DELIVERED.						
PNEUMATIC-A/B TANK PRESS	89-99-3218F BOILOFF VALVE SOLENOID	FAR 27-80750-811	2980	641027	FACTORY	YES NO
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE OF GASEOUS NITROGEN OUT OF THE 87-80768-1 SOLENOID VALVE AT RATE OF 37.3 SCFM. ALLOWABLE IS 34 SCFM. CAUSE WAS WORN AND DAMAGED POPPET SEAT. REASON FOR DAMAGE UNKNOWN. LEAKAGE PAST THE COVER PLATE WELDED TO THE 87-80768-1 BOSS AND ELECTRICAL CONNECTION. CAUSE WAS LACK OF WELD PENETRATION AND AN UNDERGIZED SPOT IN THE OVER LAPPING SPOT BEAN WELD. LEAK AREA HAD BEEN REWELDED PRIOR TO RETURN TO 60/A FROM THE AIR FORCE.						
CORRECTIVE ACTION-FAILURE CONFIRMED. INTERESTED PERSONNEL WERE NOTIFIED OF THIS ANALYSIS. DUE TO A PREVIOUS ANALYSIS						

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	3. FAR M2-A9-06-3218F, OF 27-00788-1, ANY FUTURE FAILURE ANALYSIS WAS WAIVED, UNLESS JUSTIFIED. SINCE THE 27-80750 IS 3 S.F.E. AND ARE TO BE MODIFIED TO A 27-82401 VALVE FURTHER FAILURE ANALYSIS WAS NOT RECOMMENDED TO THE AIR FORCE.						091139
PNEUMATIC-A/B TANK PRESS	89F028.3 RELIEF VALVE	UTP-PRT UTP-SLT 27-08104-9	841018	60/C	YES B.M.HADLEY NO 10328-9		091712
	FAILURE MODE-OUT OF TOLERANCE. PRT/SLT RANDOM/SINE (1) PRT-CONSISTENT OUT-OF-TOLERANCE CONDITIONS OCCURRED THROUGHOUT PRT. VALVE RELIEVED IN THE 8 TO 10 CPS FREQUENCY RANGE (X-AXIS). (2) SLT-DURING LOW FREQUENCY VIBRATION 8 TO 10 C PS (X-AXIS) THE VALVE RELIEVED AND STAYED OPEN UNTIL VIBRATION WAS STOPPED.						
	CORRECTIVE ACTION-BOOSTER CHECKOUT TOLERANCES ARE TO BE WIDENED. (IECP 7801). FRR 834-E-420, FRR 834-E-424, ECP 7801						
PNEUMATIC-A/B TANK PRESS	PET-TP-1-5479.1 C RELIEF VALVE	UTP-PET 27-08104-9	841018	60/C	YES B.M.HADLEY NO 10328-9		091714
	FAILURE MODE-OUT OF TOLERANCE. (1) STATIC CRACK AND RESEAT PRES. WAS BELOW THE LOWER LIMIT BETWEEN 0.2 AND 0.5 PSIG (FLOW LIMIT 60.9 PSIG). (2) ALL PHASES OF EXTERNAL LEAKAGE WAS EXCEEDED. LEAKAGE WAS AUDIBLE FROM THE PRIMARY POPPET. FRR 5120, LOT 1 (3/M 307-0120).						
	CORRECTIVE ACTION-BOOSTER CHECKOUT TOLERANCES WILL BE WIDENED. FRR 834-E-223.						
PNEUMATIC-A/B TANK PRESS	LV-98-08-3220F DIFFERENTIAL PRESSURE TRANSDUCER	FAR 27-08108-1	2880 841001	12	YES CRESCENT ENGIN NO EERING 89-5001		093234
	FAILURE MODE-OUT OF SPECIFICATION. UNIT HAD LOW ELECTRICAL OUTPUT. REPLACEMENT PART EXHIBITED THE SAME PROBLEM. SINCE FAILURE WAS NOT CONFIRMED IT WAS CONCLUDED THAT TRANSDUCER IS NOT COMPATIBLE WITH THE SYSTEM. TRANSDUCER TOLERANCES CANNOT BE ADEQUATELY COMPENSATED FOR BY THE SYSTEM.						
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. DESIGN GROUP DECIDED TO ELIMINATE THE TRANSDUCER. SINCE PROCUREMENT FOR THE PROGRAM WAS COMPLETE IT WAS NOT ECONOMICALLY JUSTIFIABLE. CALIBRATION PROCEDURES WERE CHANGED AT ETR AND WTR TO ALLOW GREATER TOLERANCES TO COMPENSATE FOR TRANSDUCER INADEQUACIES.						
PNEUMATIC-A/B TANK PRESS	89A3704.1 HELIUM CHANGEOVER VALVE	UTP-PRT 27-08118-17	841001	60/C	YES ROBERTSHAW-FUL NO TON 1036-27001		
	FAILURE MODE-OUT OF TOLERANCE. DURING POST PRT PROOF CYCLE THE PRESSURE DROP ACROSS THE VALVE AT 1.0 LBS/IN ² . -300 DEGREES F WITH 3000 PSIG HE WAS 18 TO 21 PSIG. ALLOWABLE PRESSURE DROP IS 18 PSIG. VALVE DID NOT OPEN TO MAXIMUM DUE TO MINIMUM VOLTAGE (27 VOLTS) AND MINIMUM LINE RESISTANCE (8-10 OHMS). REF. 407-0863 T.M. NO. 8 AND NO. 3.						

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CORRECTIVE ACTION-NONE. REF. FPR NR P-435037 AND FPR NO. PPRF435037.						
PNEUMATIC-A/B TANK PRESS	LV-90-08-3209F PRESSURE RELIEF VALVE	FAR 27-06104-3	3330 840915	FACTORY	NO	HADLEY NO 10528-5
FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.						
CORRECTIVE ACTION-THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKEN BY GO/C SINCE THIS IS A SECONDARY FAILURE.						
PNEUMATIC-A/B TANK PRESS	LV-90-08-3209F LOX TANK PRESSURE RELIEF VALVE	FAR 27-06103-15	3330 840915	FACTORY	NO	HADLEY NO 10525-15
FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.						
CORRECTIVE ACTION-THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKEN BY GO/C SINCE THIS IS A SECONDARY FAILURE.						
PNEUMATIC-A/B TANK PRESS	LV-90-08-3209F PRESSURE REGULATOR-LOX	FAR 27-08243-27	3330 840915	FACTORY	NO	HADLEY YES 10704-43
FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.						
CORRECTIVE ACTION-THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKEN BY GO/C SINCE THIS IS A SECONDARY FAILURE.						
PNEUMATIC-A/B TANK PRESS	LV-90-08-3207V HELIUM CHANGE OVER VALVE	FAR 27-08118-11	3330 840915	FACTORY	NO	ROBERTSHAW FUL TON 1096-2201
FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.						

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	CORRECTIVE ACTION-THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKE N BY GO/C SINCE THIS IS A SECONDARY FAILURE.					093079
PNEUMATIC-A/B TANK PRESS	LV-90-08-3209F PRESSURE REGULATOR-FUEL	FAR 27-08102-20	333D 640913	NO YES	FLUIDGENICS PS243-3	094093
	FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.					
	CORRECTIVE ACTION-THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKE N BY GO/C SINCE THIS IS A SECONDARY FAILURE.					
PNEUMATIC-A/B TANK PRESS	LV-90-08-3209F CHECK VALVE-OXIDIZER PRESSURE LINE 27-08114-1	FAR 333D 640914	FACTORY NO	MADLEY NO	10598-1	095079
	FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.					
	CORRECTIVE ACTION-THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKE N BY GO/C SINCE THIS IS A SECONDARY FAILURE.					
PNEUMATIC-A/B TANK PRESS	LV-90-08-3209F CHECK VALVE-OXIDIZER PRESSURE LINE 27-08114-1	FAR 333D 640913	WTR NO	MADLEY NO	10598-1	095077
	FAILURE MODE-CONTAMINATION. SUSPECTED RUBBER CONTAMINATION. RUBBER PARTICLES WERE FOUND IN THIS VALVE. SOURCE OF THE RUBBER WAS ROCKETDYNE HEAT EXCHANGER. THIS IS A SECONDARY FAILURE.					
	CORRECTIVE ACTION- THIS ANALYSIS HAS BEEN DISSEMINATED TO APPROPRIATE GO/C DEPARTMENTS. NO OTHER ACTION WILL BE TAKE EN BY GO/C SINCE THIS IS A SECONDARY FAILURE.					
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3213F SOLENOID VALVE	FAR 27-81446-929	640908 FACTORY	YES NO		
	FAILURE MODE-FAIL DURING OPERATION. SENSOR FAILED TO GO TO SHUTOFF MODE WHEN SOLENOID WAS ENERGIZED. APPLIED VOLTAGE FOR 30 TO 40 MINUTES BUILDS UP UNIT TEMPERATURE TO 135 DEGREES DURING EOP TEST AND COIL AMPERES IS TOO LOW TO PULL SOLENOID. DURING ACTUAL OPERATIONAL CONDITIONS THE BOE KEEPS SOLENOID TEMPERATURE MUCH COOLER.					
	CORRECTIVE ACTION-FAILURE CONFIRMED. T.C.A. 6 TO S.O.P. 210-11 DELETED THE 30 MINUTE WARM UP PERIOD REQUIREMENT 0A?					

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ED 640903 EFFECTIVE ON 69-80200 AND 27-00750 ASSEMBLIES.							092144
PNEUMATIC-A/B TANK PRESS	LV-98-08-3210F PRESSURE REGULATOR-FUEL	FAR 27-00248-33	2890 640825	13	YES FLUIDGENICS NO P 243-5		092234
FAILURE MODE-CONTAMINATION. BLACK AND WHITE PARTICLES WERE FOUND INSIDE THE OUTLET PORT. PIECES OF LUBRICANT, PROBABLY LOW SAFE, AND PARTICLES OF POLYETHYLENE WERE IDENTIFIED.							
CORRECTIVE ACTION-APPROPRIATE ASSEMBLY AND INSPECTION PERSONNEL WERE NOTIFIED OF THIS ANALYSIS AND CAUTIONED ABOUT THE NECESSITY FOR CLEANLINESS DURING ASSEMBLY BUILDUP.							
PNEUMATIC-A/B TANK PRESS	LV-93-08-3210 F PRESSURE REGULATOR-FUEL	FAR 27-00248-33	2890 640820	13	NO FLUIDGENICS NO P 243-5		095769
FAILURE MODE-INTERNAL LEAKAGE BETWEEN FLANGE AND REGULATOR BODY. LEAKAGE AMOUNT WAS SMALL AND WITHIN ALLOWABLE LIMIT. THIS IS NOT A FAILURE.							
CORRECTIVE ACTION-FIELD PERSONNEL WERE TOLD THAT THE ALLOWABLE LEAK RATE AT 25 PSIG WITH INLET PORT CAPPED IS 5 SCIN FROM ALL PARTS. ALLOWABLE FROM END FITTINGS IS ABOUT THE SAME AMOUNT EVEN AT 60 PSIG. THE LARGEST PORTION OF THE ALLOWABLE 35,000 SCIN LEAKAGE AT 60 PSIG IS FROM OTHER CONTROLLED BLEED PORTS ON THE REGULATOR. REFERENCE PAR LV-98-08-3800.							
PNEUMATIC-A/B TANK PRESS	27A3696 MANUAL SHUTOFF VALVE	UTP-PET 27-06108-3	640819	60/C	YES PEACOCK NO 51385-1-M		090933
FAILURE MODE-OUT OF SPECIFICATION. 110 IN-LB TORQUE WAS REQUIRED TO TURN BUTTERFLY INTO CLOSED POSITION. SPECIFICATION IS 90 IN-LB MAXIMUM ALLOWABLE. S/N 408-1298 T.M. NO. 2.							
CORRECTIVE ACTION-RECOMMEND USE OF PROPER TYPE OF TORQUE WRENCH. REF. MEMO 642-7-281, PRR-634-2-063 AND PRR-634-2-361.							
PNEUMATIC-A/B TANK PRESS	27A 3600 LOW PNEUMATIC STAGING DISCONNECT	UTP-PET 27-06124-3	640811	60/C	YES B.M.HADLEY NO 10717-3		
FAILURE MODE-EXTERNAL LEAK. DURING AND AFTER LIFE TESTING (PET) EXTERNAL LEAKAGE WAS OUT OF TOLERANCE -82 SCIN VS 25 SCIN SPEC ALLOWABLE. REF. S/N 408-2359 T.M. NO. 1.							
CORRECTIVE ACTION-NONE. MINOR FUNCTIONAL OUT-OF-TOLERANCE LEAKAGE CONSIDERED NEGLIGIBLE. LOT ACCEPTED. REF. PPR 64							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
F-3143-SVT AND PRR NO. PR 654-E-366.						
PNEUMATIC-A/B TANK PRESS	99A3649-1 LOK TANK PRESSURE RELIEF VALVE	UTP-PET 27-08103-15	540804	60/C	YES NO	HADLEY NO 10529-15
FAILURE MODE-OUT OF TOLERANCE. DURING PET 3-AXIS VIBRATION AT 1750 CPS AND 896 (SINGLE AMPLITUDE), THE VALVE UNSEATED AT 31.2 PSIG, RESEATED AT 27 PSIG AFTER VENTING THE ULLAGE PRESSURE. REF. S/N 405-0797 T.M. NO. 1.						
CORRECTIVE ACTION-SUBMIT ECP FOR REDESIGN OF VALVE. REF. PRR NO. 654-E-209.						
PNEUMATIC-A/B TANK PRESS	A-89-08-3200F TUBE ASSEMBLY-3000 PSI MELLUM	FAR 27-80003-113	3000	FACTORY	NO NO	
FAILURE MODE-STRUCTURAL. COUPLING NUT THOUGHT TO BE CRACKED ON ONE HEX FLAT, AFTER A DYE PENETRANT CHECK. CRACK-LIKE APPEARANCE ON THE FLAT WAS CAUSED BY A SEAM LAP FORMED DURING ROLLING OF THE BAR STOCK. NO EVIDENCE OF OVERSTRESSING WAS FOUND.						
CORRECTIVE ACTION-NOT A FAILURE. NO CORRECTIVE ACTION TAKEN.						
PNEUMATIC-A/B TANK PRESS	27A3513 RISE-OFF DISCONNECT COUPLING	UTP-PET 27-06120-7	640729	50/C	YES NO	HADLEY NO 10529-3
FAILURE MODE-OUT OF SPECIFICATION. DURING PET POST OPERATING PROOF CYCLE LEAKAGE RANGED FROM 893 TO 1022 SCIN. ALLOWABLE LEAKAGE IS 900 SCIN. TEMPERATURE AT LEAKAGE WAS -104 DEGREES F. NOTE PET LOT 11. REF. S/N 403-2977 T.M.						
CORRECTIVE ACTION-NONE. PET LOT ACCEPTED. REF. RTM NR PRR F-5130-SVT AND PRR NO. PR 654-E-350.						
PNEUMATIC-A/B TANK PRESS	LV-98-08-3208F SOLENOID SENSOR VALVE	FAR 27-81448-925	1930	CTR	NO NO	
FAILURE MODE-LEAK-EXTERNAL. LEAKAGE FROM THE ATMOSPHERIC VENT IN TOP OF CONTROLLER. AMOUNT OF LEAKAGE WAS 0.30 SCIN. LATER IT WAS DETERMINED THAT LEAK WAS NOT FROM VENT BUT FROM PORT C AND ALLOWABLE LEAKAGE IS 100 SCIN MAX.						
CORRECTIVE ACTION-NOT CONFIRMED. NO ACTION TAKEN.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PHI DIF TIME	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	LV-99-08-3203F BOILOFF VALVE	PAR 27-80730-847	640717	FACTORY	YES NO		091830
FAILURE MODE-EXTERNAL LEAKAGE. PAST WELD AREAS AND OUT THE SENSOR BELLONS. PROBABLY CAUSED BY DISPLACEMENT OF AIR IN THE BELLONS AS THEY WERE COMPRESSED.							
CORRECTIVE ACTION-LEAKAGE THRU WELDS, BUT NOT THRU SENSOR BELLONS, FIELD PERSONNEL WERE PROVIDED COPIES OF THE ANALYSIS. APPROPRIATE FACTORY PRODUCTION AND INSPECTION CHECKED WELD SCHEDULES AND CLEANING AFTER ELECTROETCHING. THIS IS IN RESPONSE TO RAR LV-99-08-3797 AND IS DOCUMENTED BY CORRECTIVE ACTION MEMO DATED 641130.							
PNEUMATIC-A/B TANK PRESS	LV-98-08-3190F SOLENOID SENSOR VALVE-BOIL OFF VALVE	PAR 27-81448-825	2300 640715	12	YES NO		090650
FAILURE MODE-OUT OF TOLERANCE. VALVE RESEATED AT 3.8. TOO LOW. MINIMUM ALLOWABLE IS 3.9 PSIG. CAUSED BY THE BELLONS WENT PORT BEING COVERED BY TAPE.							
CORRECTIVE ACTION-NO FAILURE OF COMPONENT. PRODUCTION AND SITE PERSONNEL WERE REQUESTED TO ASSURE THAT THE VENT PORT IN THE BELLONS IS NOT TAPED CLOSED BEFORE SHIPMENT STORAGE, OR VALVE TESTING. REFERENCE TWR ETR 9-329 AND WTR 9-12 D DATED 640924.							
PNEUMATIC-A/B TANK PRESS	SLV-90-08-3202F PRESSURE REGULATOR - FUEL TANK	PAR 27-08108-37	7101 640713	8-4	NO NO	FLUIDGENICS P243-6	091817
FAILURE MODE-OUT OF TOLERANCE. REGULATOR CAUSED A 5 PSID PRESSURE OSCILLATION FROM 95 TO 70.1. CAUSE WAS THE TEST SYSTEM. MOD. MISSILE WAS LAUNCHED WITH A REPLACEMENT REGULATOR THAT ALLOWED THE SAME TEST SYSTEM PRESSURE OSCILLATION 8. THIS IS NOT A FAILURE OF THIS PART.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. DESIGN AND FIELD PERSONNEL WERE INFORMED OF THE RESULTS OF THIS ANALYSIS.							
PNEUMATIC-A/B TANK PRESS	89A3445 LOX TANK PRESSURE RELIEF VALVE	UTP-PE1 27-08103-118	640701	60/C	YES NO	WADLEY 10383-118	
FAILURE MODE-FAIL DURING OPERATION. DURING PROOF CYCLE AFTER 200 LIFE TEST CYCLES, THE UNIT RESEATED 2 PSIG BELOW A MINIMUM OF 35.1 PSIG. DURING FULL FLOW TEST THE TANK PRESSURE INCREASED 1 PSIG BEYOND THE MAXIMUM ALLOWABLE OF 35.7 PSIG. NOTE, LOT NO. 1. REF. 8/N 408-1039 T.H. NO. 1 AND 8.							
CORRECTIVE ACTION-LOT WAS ACCEPTED BASED ON MINOR FUNCTIONAL OUT-OF-TOLERANCE. 80/C PROPOSED CHANGES IN THE VALVE							

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GENERAL DYNAMICS
COMPAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	STATE TIME DIP	PR1, VENDOR NAME OTH VENDOR PART NO
O NASA/ AEROSPACE/AIRFORCE. REF. PPR NR F-3124-ST AND PPR NO. 854-S-336.					
PNEUMATIC-A/B TANK PRESS	89A3556 LOX TANK PRESSURE RELIEF VALVE	UTP-PET 27-08103-13	640829	60/C	YES MADLEY NO 10825-15
FAILURE MODE-OUT OF TOLERANCE. DURING POST VIBRATION PROOF CYCLE, THE VALVE FAILED TO RESEAT ABOVE THE 32.1 PSIG MINIMUM RESEAT PRESSURE. THE OUT OF TOLERANCE READINGS WERE 31.3 AND 31.7 PSIG. REF. S/N 205-0471, T.M. NO.1.					
CORRECTIVE ACTION-TEST DISCONTINUED. LOT WAS ACCEPTED BASED ON MINOR FUNCTIONAL OUT OF TOLERANCE. REF. PPR NR F-3124-ST AND PPR NO. 854-S-336.					
PNEUMATIC-A/B TANK PRESS	SLV-A9-08-3192F BOILOFF VALVE SOLENOID BELLOWS	FAR 89-80200-1	7107	FACTORY	YES NO
FAILURE MODE-ERRATIC OPERATION. VALVE OPERATED ERRATICALLY. CRACK PRESSURE WAS INCONSISTENT. CAUSED BY AN OUT OF LINE SOLENOID SENSOR BELLOWS. MISALIGNMENT OCCURRED DURING MANUFACTURE.					
CORRECTIVE ACTION-PER BAR SLV-A9-08-3791 INSPECTION AND MANUFACTURING PERSONNEL WERE INFORMED OF THIS ANALYSIS.					
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3201F DIFFERENTIAL PRESSURE SWITCH	FAR 27-00130-1	3530	FACTORY	YES HYDRA ELECTRIC NO 32018-1
FAILURE MODE-OUT OF TOLERANCE. ACTUATED AT LESS THAN MINIMUM ALLOWED. CAUSE NOT KNOWN. NO DISCREPANCIES FOUND DURING ANALYSIS.					
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. AS OF JULY 1984 ISOPROPYL ALCOHOL IS USED FOR THE FINAL RINSE. TRICHLOROETHYLENE IS NO LONGER USED FOR CLEANING AND THE DE-IONIZED RINSE WAS DISCONTINUED DUE TO THE EXCESS DRYING PERIOD REQUIRED. MEMO DATED 840950 STATES THAT UPT WILL CONDUCT CLOSE SURVEILLANCE TO ASSURE TIGHTENED CONTROLS BY ALL CONCERNED. REFERENCE BAR SLV-99-08-3794.					
PNEUMATIC-A/B TANK PRESS	89F-1942-1 HELIUM CHANGE-OVER VALVE	UTP-PAT 27-08118-13	640823	OTHER	NO ROBERTSWAN-FUL NO TON 1084-20001
FAILURE MODE-INTERNAL LEAK. INTERNAL LEAKAGE WAS 1000 CC/MIN. (MAXIMUM ALLOWABLE IS 500 CC/MIN.). FOLLOWING PAT VIBRATION TEST AT -300 DEGREES F, WITH 5000 PSIG, THE EXCESSIVE LEAKAGE WAS FOUND TO BE IN TEST SETUP. T.M. 44921-27.					
CORRECTIVE ACTION-REVISE TEST SETUP TO ELIMINATE LEAKAGE. PPR F0890.					

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	89P2028-1A FUEL TANK PRES RELIEF VALVE	UTP-ETT 27-08104-9	840622	607C	YES NO	B.M. MADLEY NO 10328-9	001713
FAILURE MODE-OUT OF TOLERANCE. DURING POST ETT PROOF CYCLE, FULL FLOW RESPONSE, THE RESEAT PRES. WAS 0.3 PSIG BELOW MINIMUM ALLOWABLE OF 80.5 PSIG. FRR 4313, D/N 401-1248.							
CORRECTIVE ACTION-NONE. FRR 654-2-337.							
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3201-F DIFFERENTIAL PRESSURE SWT CH	FAR 27-08130-1	10F 840619	FACTORY	YES NO	HYDRA ELECTRIC NO 32018-1	001637
FAILURE MODE-OUT OF TOLERANCE. UNIT ACTUATED AT LESS THAN MINIMUM ALLOWED PRESSURE DIFFERENTIAL. SOME CORROSION FOUND IN THE LIQUID-OXYGEN PRESSURE SIDE, CAUSED BY CLEANING SOLVENT PLUS IMPROPER DRYING. CORROSION COULD NOT HAVE CAUSED THE FAILURE AS REPORTED.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED-AS OF JULY 1984, ISOPROPYL ALCOHOL IS USED FOR FINAL RINSE WHILE TRICHLOROETHYLENE IS NO LONGER USED FOR CLEANING. THE DE-IONIZED WAS DISCONTINUED DUE TO EXCESS DRYING PERIOD REQUIRED. MEMO DATED 640930 STATES THAT O.P.I. WILL CONDUCT SURVEILLANCE TO ASSURE TIGHTENED CONTROLS BY ALL CONCERNED. REFERENCE PAR SLV-99-08-3794.							
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3201F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-9	10F 840619	FACTORY	YES NO	HYDRA ELECTRIC NO 32018-1	001210
FAILURE MODE-CONTAMINATION. ACTUATED AT LESS THAN MINIMUM ALLOWED. SPECIFIED RANGE IS 0.9 PLUS OR MINUS 0.3 PSIG. CORROSION WAS FOUND IN THE LOW SIDE FROM CLEANING SOLVENT RESIDUE. CORROSION IN THE ANNULAR NOTCH OF THE PRESSURE PLATE COULD ACCOUNT FOR THIS FAILURE.							
CORRECTIVE ACTION-NOT CONFIRMED. AS OF JULY 1984 ISOPROPYL ALCOHOL IS USED FOR FINAL RINSE AND TRICHLOROETHYLENE IS NO LONGER USED FOR CLEANING. THE DE-IONIZED RINSE WAS DISCONTINUED DUE TO THE EXCESS DRYING PERIOD REQUIRED. MEMO DATED 640930, STATES THAT OPI WILL CONDUCT SURVEILLANCE TO ASSURE TIGHTENED CONTROLS BY ALL CONCERNED. REFERENCE PAR SLV-99-08-3794.							
PNEUMATIC-A/B TANK PRESS	89P1902-1 HELIUM CHANGEOVER VALVE	UTP-PAT 27-06118-13	840619	OTHER	YES NO	1090-22001	
FAILURE MODE-OUT OF TOLERANCE. EXCESSIVE LEAKAGE (INTERNAL) AT (-300 DEGREES F) DURING PAT INITIAL PROOF CYCLE LEAKAGE COULD NOT BE MEASURED. PAT, INITIAL PROOF CYCLE INTERNAL LEAKAGE WAS 404 SCCM. ALLOWABLE IS 500 SCCM. PRESSURE DROP ACROSS VALVE WAS EXCESSIVE AT 24 PSIG. SHOULD BE 15 PSIG. T.M. 44081-28.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE. FRR F-4330.						
PNEUMATIC-A/B TANK PRESS	PET-TP-1-3886.1 DISCONNECT-STAGING PNEUMATIC	UTP-PET 27-08125-3	640610	OTHER	YES B.M. MADLEY NO 10710-9	99076
FAILURE MODE-OUT OF TOLERANCE. FOUR OUT OF TOLERANCE LEAKAGES OCCURRED DURING THE LIFE CYCLE AFTER DISCONNECT. THE MAXIMUM RATE WAS 29 SCIM COMPARED TO THE SPECIFICATION OF 25 SCIM.						
CORRECTIVE ACTION-NONE. CONTINUE TESTING. LEAKAGE RATE IS ACCEPTABLE.						
PNEUMATIC-A/B TANK PRESS	99A3117 FUEL TANK PRESSURE REGULATOR SHAFT NUT	UTP-PET 27-08248-29	640617	OTHER	YES FLUIDGENICS NO P-243-8	99088
FAILURE MODE-STRUCTURAL. DURING THE 337 TH CYCLE OF THE 400 CYCLE LIFE TEST, THE UNIT FAILED TO REGULATE TANK PRESSURE UPON DISASSEMBLY. STOP VALVE SHAFT NUT WAS FOUND BROKEN AT FLANGE RADIUS. AN ALT FAILURE OCCURRED ON 5-22 OF THE SAME TYPE.						
CORRECTIVE ACTION-NONE. METAL FATIGUE WAS CAUSE OF FAILURE. THE STOP VALVE SHAFT AND NUT ARE KNOWN TO BE WEAK DESIGN POINTS AND CUSTOMER HAS BEEN INFORMED.						
PNEUMATIC-A/B TANK PRESS	FR 89-3487.1 HELIUM CHANGEOVER VALVE	UTP-PRT 27-08110-13	640613	OTHER	YES ROBERTSHAW-PUL NO TON 1090-22001	99194
FAILURE MODE-OUT OF TOLERANCE. DURING PRT POST 2 AXIS VIBRATION TEST INTERNAL LEAKAGE WAS 1895 SCCH. ALLOWABLE LEAKAGE IS 500 SCCH. SPECIMEN WAS SUBJECTED TO MINUS 300 DEGREES ME AT 3000 PSI. REF. S/N 311-0950 T.M. NO. 44821-22.						
CORRECTIVE ACTION-VENDOR POPPET BEATING ADJUSTMENT PROCEDURE REVISED. REF. ECP 777A. (VALVE CHANGED TO -17). REF. F PR NR F-4314 ST AND FRR NO. FR 634-2-323.						
PNEUMATIC-A/B TANK PRESS	99F-1942-1 HELIUM CHANGEOVER VALVE	UTP-PAT 27-08110-13	640619	OTHER	YES ROBERTSHAW PUL NO TON 1090-22001	99190
FAILURE MODE-INTERNAL LEAK. POST-PAT X-AXIS VIBRATION TEST. INTERNAL LEAKAGE WAS 3400 SCCH. ALLOWABLE WAS 500 SCCH TEST RUN AT -300 DEGREES F. FRR-4286, T.M. 44821-20.						
CORRECTIVE ACTION-NONE. FRR 634-2-323.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	FR89-3487-1 HELIUM CHANGEOVER VALVE	UTP-PRT 27-08116-15	640615	OTHER	YES NO	ROBERTSHAW-FUL NO TOM 1000-2201
FAILURE MODE-ELECTRICAL OPEN. FOLLOWING PRT Y-AXIS VIBRATION TEST THE SPECIMEN WOULD NOT ACTUATE TO THE CLOSED POSITION. CONTINUITY CHECKS INDICATED AN OPEN CIRCUIT. AN ANALYSIS DISCLOSED A BROKEN LUG AT THE MOTOR BRUSH HOLDER. REF. 3/M 311-0950 T.N. NO. 44921-22.						
CORRECTIVE ACTION-REDUCE LENGTH OF MOTOR BRUSH ELECTRICAL LEADS AND PROVIDE SUPPORT. REF. ECP 7774 (VALVE CHANGED T O -17). REF. FPR NR F-4314 37 AND FPR NO. FR 834-2-325.						
PNEUMATIC-A/B TANK PRESS	SLV-49-08-31977 PRESSURE RELIEF VALVE FUEL TANK	FAR 27-08104-9	7103 640612	FACTORY	NO NO	B.M. HADLEY NO 10328-9
FAILURE MODE-OUT OF TOLERANCE. RESEATED AT 87.5. TOO LOW. MINIMUM ALLOWABLE IS 94.5 PSIG. CAUSED BY A PRESSURE PIT SYSTEM PROBLEM. PIT SENSE LINE AND DUCTING WERE LONGER THAN THOSE ON AN SLV MISSILE.						
CORRECTIVE ACTION-NOT CONSIDERED A FAILURE. PIT PERSONNEL SHORTENED SENSE LINE AND DUCTING. SYSTEM CHECKED SATISFACTORY. TWX 7-103 AND 7-77 WERE SENT TO ETR AND WTR NOTING RESULTS OF THIS ANALYSIS. IF A SIMILAR PROBLEM OCCURS AT A SITE THEN THE LINE AND DUCT LENGTHS SHOULD BE CHECKED.						
PNEUMATIC-A/B TANK PRESS	60F1962-1 HELIUM CHANGEOVER VALVE, MOTOR	UTP-PRT 27-08116-15	640610	OTHER	YES NO	ROBERTSHAW-FULT NO ON
FAILURE MODE-ELECTRICAL OPEN. DURING PROOF CYCLE OF THE THIRD AXIS, MOTOR FAILED TO RESPOND ON COMMAND. CONTINUITY CHECKS REVEALED INTERNAL SWITCHING FAILED DURING VIBRATION. MOTOR LEAD WIRE WAS BROKEN AT TERMINAL. 3/M 311-0945 T.N. 44921-17.						
CORRECTIVE ACTION-STOP TESTING. FPR 834-2-325.						
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3201F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-9	7101 640608	E-4	YES NO	HYDRA ELECTRIC NO 32018-1
FAILURE MODE-OUT OF TOLERANCE. ACTUATED AT LESS THAN MINIMUM ALLOWED. SPECIFIED RANGE IS 0.8 PLUS OR MINUS 0.3 PSIG. CORROSION WAS FOUND IN THE LOW SIDE FROM CLEANING SOLVENT RESIDUE BUT COULD NOT HAVE CAUSED FAILURE UNLESS LOOSE CORROSION PARTICLES RAISED THE PRESSURE PLATE WITH RESPECT TO THE MICROSWITCH.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. AS OF JULY 1964 ISOPROPYL ALCOHOL IS USED FOR FINAL RINSE AND TRICHLOROETHYLENE IS NO LONGER USED FOR CLEANING. THE DE-IONIZED RINSE WAS DISCONTINUED DUE TO THE EXCESS DRYING PERIOD REQUIRED.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PRI DIF	QTH DIF	VENDOR NAME VENDOR PART NO
MEMO DATED 840930 STATES THAT OPI WILL CONDUCT SURVEILLANCE TO ASSURE TIGHTENED CONTROLS BY ALL CONCERNED. REFERENCE C RAR 84V-99-08-3784.							
PNEUMATIC-A/B TANK PRESS	89F1982-1 HELIUM CHANGEOVER VALVE	UTP-PAT 27-08118-13	840809	OTHER	YES	ROBERTSHAW FUL NO TON 1098-22001	890952
FAILURE MODE-OUT OF TOLERANCE. COLD TEMPERATURE (-300 DEGREES F) INTERNAL LEAKAGE RANGED FROM 890 SCCM TO 1700 SCCM THROUGHOUT THE PAT TEST. ALLOWABLE LEAKAGE IS 500 SCCM. THE THERMOPLASTIC SEAT WAS THE WRONG MATERIAL. S/N 311-0945 T.M. 44921-18.							
CORRECTIVE ACTION-MATERIAL INVESTIGATION IS BEING CONDUCTED. FRR 854-2-323.							
PNEUMATIC-A/B TANK PRESS	89M487-1 HELIUM CHANGEOVER VALVE-MOTOR	UTP-PAT 27-08118-13	840808	OTHER	YES	ROBERTSHAW FUL NO TON 1098-22001	890951
FAILURE MODE-ELECTRICAL SHORT. THE MOTOR WOULD NOT SHUT OFF WHEN VOLTAGE WAS APPLIED IN EITHER DIRECTIC EXCESSIVE SOLDER ON PIN A GROUNDED PIN A TO CASE, CAUSED CONTINUOUS OPERATION IN EITHER DIRECTION. S/N 311-0951 T.M. 44921-12							
CORRECTIVE ACTION-VENDOR WILL CONDUCT ELECTRICAL CHECKS TO ELIMINATE THIS PROBLEM. FRR 854-2-325.							
PNEUMATIC-A/B TANK PRESS	89M487-1 HELIUM CHANGEOVER VALVE-SEAL	UTP-PAT 27-08118-13	840527	OTHER	YES	ROBERTSHAW FUL NO TON 1098-22001	890988
FAILURE MODE-EXTERNAL LEAKAGE. DURING 3 TESTS S/N 308-0937, THE FOLLOWING OCCURRED. (1) POST X-AXIS VIBRATION PROOF CYCLE INTERNAL LEAKAGE WAS 3000 SCCM. SPECIFICATION IS 500 SCCM (T.M. NO.8). (2) DURING Z-AXIS, LEAKAGE WAS 4800 S CCM AT -300 DEGREES F. 1500 SCCM AT AMBIENT (T.M.NO.10). (3) LEAKAGE WAS TOO EXCESSIVE TO MEASURE WITH WATER DISPLACEMENT AT -300 DEGREES F. INVESTIGATION SHOWED SEAT LIP SEAL TO BE DEFORMED. (T.M.NO.14 SHOULD BE BETWEEN 9 AND 10).							
CORRECTIVE ACTION-NONE. FRR 4312, FRR 323.							
PNEUMATIC-A/B TANK PRESS	89M487-1 HELIUM CHANGEOVER VALVE-SEAL	UTP-PAT 27-08118-13	840323	OTHER	YES	ROBERTSHAW FUL NO TON 1098-22001	890952
FAILURE MODE-STRUCTURAL. (1) INTERNAL LEAKAGE WAS 12000 SCCM AT -300 DEGREES F AND 3000 P816 INPUT DURING INITIAL LEAK TEST. ALLOWABLE IS 500 SCCM. (2) POST AMBIENT FLOW LEAKAGE WAS 1300 SCCM. CONSISTENT LEAKAGE RATE WAS CAUSED BY DETEIORATION OF VALVE SEAT. OPEN PASSAGE WAS EXPOSED ACROSS THE LIP SEAL AT ONE LOCATION. T.M. 44921-9.8 FRR 4888, S/N 311-0945.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-STOP TEST, FPR 4292 FPR 325.						
PNEUMATIC-A/B TANK PRESS	LV-99-08-3109F SOLENOID SWITCH	FAR 27-08340-801	640381	FACTORY	YES IMC MAGNETICS NO 80473-3	892042
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. MICROSWITCH FAILED TO OPERATE AFTER A 30 MINUTE WARM UP. COMPLETE 27-81448 ASSEMBLY WAS NOT RECEIVED. ONLY THE 27-08340-801 SOLENOID.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. PER RAR LV-99-08-3792 IF FAILURE REOCCURS THEN THE 27-81448 VALVE ASSEMBLY IS TO BE SENT IN FOR ANALYSIS, NOT JUST THE 27-08340.						
PNEUMATIC-A/B TANK PRESS	890487.1 HELIUM CHANGEOVER VALVE, FITTING	UTB-PAT 27-08118-13	640319	OTHER	YES ROBERTSHAW FUL NO TON 1099-22001	891770
FAILURE MODE-OUT OF SPECIFICATION. PRE-PAT-VIBRATION PROOF CYCLE, EXTERNAL LEAKAGE WAS 15000 CCM. ALLOWABLE WAS 500 CCM WITH -300 DEGREES F AT 3000 PSIG. FPR-4291 8/N 311-0849.						
CORRECTIVE ACTION-EXTERNAL LEAKAGE AT FITTING WAS CORRECTED AFTER LOW-SAFE COMPOUND WAS APPLIED. FPR-4291, FPR 834-2-323.						
PNEUMATIC-A/B TANK PRESS	SLV-AB-08-3184F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-9	7101 640313	FACTORY	NO B.M. MADLEY YES 10328-9	892044
FAILURE MODE-OUT OF SPECIFICATION. RESEATED AT 87.3 PSIG. MINIMUM ALLOWED IS 86.3 PSIG. PRESSURE PIT SENSE LINE AND DUCTING WERE FOUND TO BE LONGER THAN THOSE ON SLV MISSILE. 1AT REPORT MINIMUM VALUE WAS 86.8 WHILE BANGBORN RECORDING 6 MINIMUM RESEAT VALUE WAS 86.4 PSIG.						
CORRECTIVE ACTION-NOT CONFIRMED. PERSONNEL CONCERNED AND 8.C. MANAGER WERE NOTIFIED THAT ALL FUTURE BANGBORN RECORDING TAPES AND 1AT TEST DATA SHEETS MUST BE SCREENED BY OPT 100 PERCENT BEFORE SUBMISSION FOR ACCEPTANCE BY OPT. TO CO NROL SUPPLIER 8.C. SYSTEM, THE OPT HAS RECORDED ALL APPLICABLE DATA ON VENDOR 8.C. OPERATIONAL CARDS. THE VENDOR IS SUED MEMOS TO COGNIZANT DEPARTMENTS TO CORRECT THIS PROBLEM. REFERENCE VCAR 6641-64 DATED 640413 AND RAR 3LV-AB-08-3789. REF. FAR 3LV AB-08-3185.						
PNEUMATIC-A/B TANK PRESS	SLV-AB-08-3186C FUEL TANK PRESSURE RELIEF	FAR 27-08104-9	7101 640313	FACTORY	NO B.M. MADLEY NO 10328-9	892044
FAILURE MODE-OUT OF SPECIFICATION. VALVE RESEATED AT 87.8 MINIMUM ALLOWABLE RESEAT IS 86.3 PSIG. CAUSE WAS PRESSURE PIT TESTING EQUIPMENT DISCREPANCIES. RESEAT OF VALVE IN THE LABORATORY RESULTED IN A RESEAT OF 86.8 PSIG. THIS IS IN						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PR1 OTM	VENDOR NAME VENDOR PART NO
OT A FAILURE.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	SLV-AB-08-3193F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-9	7101 840512	FACTORY	NO	B.M. MADLEY YES 10928-9
FAILURE MODE-OUT OF TOLERANCE. RESEATED AT 80.0 PSIG. TOO LOW. MINIMUM ALLOWED IS 80.5 PSIG. PRESSURE PIT SENSE LINE AND DUCTING WERE FOUND TO BE LONGER THAN SIMILAR ITEMS ON THE SLV MISSILE. REGULATOR DID NOT FAIL.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. PRESSURE PIT PERSONNEL WERE NOTIFIED OF POSSIBLE SYSTEM PROBLEM. THE SENSE LINE AND DUCTING WERE SHORTENED TO BE COMPARABLE TO ACTUAL SLV MISSILE CONFIGURATION. A TEST RESULTED IN SATISFACTORY RESULTS. THE 7-193 AND 7-77 WERE SENT TO CIR AND WTR NOTING RESULTS OF THIS ANALYSIS. IF A SIMILAR PROBLEM ARISES AT THE SITE THEN LINES AND DUCTS SHOULD BE CHECKED FOR CORRECT LENGTH.						
PNEUMATIC-A/B TANK PRESS	LV-99-08-3187 PRESSURE REGULATOR-LIQUID OXYGEN T 27-08245-27 ANK	FAR 27-08245-27	3530 840508	FACTORY	NO	B.M. MADLEY NO 10704-33
FAILURE MODE-OUT OF TOLERANCE. AT END OF LEAKAGE FILL, WITH FULL PRESSURE, THE PRESSURE DROPPED 0.2 PSIG BELOW A MINIMUM OF 28.4 PSIG.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. ALLOWABLE LEAKAGE FILL PRESSURE LIMITS WERE WIDENED TO 30.2 PLUS OR MINUS 0.8 PSIG BY EOP 410.5 D DATED 840822 WHEN IT WAS KNOWN THAT PRESSURE PIT VALUES WERE LOW.						
PNEUMATIC-A/B TANK PRESS	LV-99-08-3189 C PRESSURE REGULATOR-LIQUID OXYGEN T 27-08245-29 ANK	FAR 27-08245-29	3530 84 03 08	FACTORY	YES	B.M. MADLEY YES
FAILURE MODE-OUT OF SPECIFICATION. TANK PRESSURE VALUES OF 29.6 AND 29.7 WERE OBSERVED, SPECIFICATION READS 30.2 PLUS OR MINUS 0.3 PSIG. PART NOT RECEIVED FOR ANALYSIS.						
CORRECTIVE ACTION-ALLOWABLE LEAKAGE FILL PRESSURE LIMITS WERE WIDENED TO 30.2 PLUS OR MINUS 0.6 PSIG BY EOP 410.5 D DATED 840822 WHEN IT WAS KNOWN THAT PRESSURE PIT VALUES WERE LOW.						
PNEUMATIC-A/B TANK PRESS	LV-AB-08-3191 FITTING ADAPTER-HELIUM BOTTLE TO T 7-87590-9 103146	FAR 7-87590-9	3530 840508	FACTORY	YES	GO/C NO GO/C
FAILURE MODE-STRUCTURAL. CRACKED IN THE THREADS OF ONE FLUID CONNECTION. CAUSE EVIDENTLY WAS A TUBE FLARE DEFICIENCY. TWO UNITS AFFECTED.						

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME	DIP OTM	VENDOR NAME VENDOR PART NO
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. PREVIOUS ACTION, DRAWING CHANGE D, DATED 830825, ELIMINATED USE OF 303 STA INLESS STEEL FOR THIS APPLICATION BECAUSE IT IS PRONE TO HEAVY INCLUSION STRINGERS.					
PNEUMATIC-A/B TANK PRESS	LV-A9-08-3103F LOX TANK RELIEF VALVE	FAR 27-08103-13	3930 640503	FACTORY	YES B.M. MADLEY NO 10325-13	893767
	FAILURE MODE-FAIL DURING OPERATION. VALVE WOULD NOT RESEAT AFTER CRACKING AT 33.4 PSIG. IT WAS CONCLUDED THAT AN EXCESS OF LOX SAFE LUBRICANT WAS USED AT INSTALLATION AND CAUSED THE FAILURE.					
	CORRECTIVE ACTION-PER FAR LA-A9-08-3790 GO/C SUPERVISION RESPONSIBLE FOR LOX SAFE APPLICATION WERE TOLD IN DETAIL ABOUT RELIEF VALVE MALFUNCTION AND WERE REINSTRUCTED IN CORRECT USE OF LOX SAFE LUBRICANT. REFERENCE MEMO OF AUG. 4, 1964.					
PNEUMATIC-A/B TANK PRESS	89F-E028-1A FUEL TANK PRESSURE RELIEF VALVE	UTP-EIT 27-03104-9	840428	GO/C	YES B.M. MADLEY NO 10326-9	890939
	FAILURE MODE-OUT OF SPECIFICATION. DURING FULL FLOW RESPONSE IN 1AT, THE UNIT REPEATED LOW ON EACH OF THREE TRIALS BY 0.4 PSIG. ALLOWABLE MINIMUM IS 80.5 PSIG. FPR 4272, 3/M 401-1248.					
	CORRECTIVE ACTION-NONE. FPR 634-2-337.					
PNEUMATIC-A/B TANK PRESS	FR-69N-1986.1 PNEUMATIC STAGING DISCONNECT COUPL	UTP-SLT 27-08120-1,-3	840428	OTHER	YES B.M. MADLEY NO 10714-13,-19	890828
	FAILURE MODE-EXTERNAL LEAKAGE. EXCESSIVE LEAKAGE RATES WERE EXPERIENCED WITH COUPLING IN ENGAGED POSITION DURING SLT LOW TEMPERATURE VIBRATION-2-AXIS, SLT ROOM AMBIENT TEMPERATURE VIBRATION-Y-AXIS, SLT HIGH TEMPERATURE VIBRATION-X-AXIS AND POST SLT TEMPERATURE VIBRATION PROOF CYCLE. EXCESSIVE DISENGAGED POSITION LEAKAGE RATES RANGING FROM 30 TO 90 SCIM WERE EXPERIENCED DURING SLT HIGH TEMPERATURE VIBRATION X-AXIS TESTS. ALLOWABLE LEAKAGE IS 25 SCIM. REF. 3/M 209-2080 AND 210-0394 T.M. NO. 2843-33, -34, -35, -39.					
	CORRECTIVE ACTION-REF RTM FPR NR8 F-4256-BT, F-4258-BT, F-4260-BT AND FPR NO. FR656-2-274.					
PNEUMATIC-A/B TANK PRESS	FR-69N-1989.1 RISE-OFF DISCONNECT COUPLING	UTP-SLT 27-08120-3	840428	OTHER	YES MADLEY NO 19829-1	
	FAILURE MODE-OUT OF SPECIFICATION. DURING SLT LOW TEMPERATURE (-50 DEGREES F) VIBRATION IN 2-AXIS WHILE ENGAGED, THE UNIT LEAKAGE RANGED FROM 800 TO 30,000 SCIM. ALLOWABLE LEAKAGE IS 900 SCIM. REF. 3/M 209-2480 AND 209-1891 T.M. 29					

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
43-30.							09C096
	CORRECTIVE ACTION-NONE. REF. RTN NR F-4233-37 AND PRR NO. FR-654-2-260.						090097
PNEUMATIC-A/B TANK PRESS	FR-69M-1989-1 RISE-OFF DISCONNECT COUPLING	UTP-SLT 27-00120-7	640423	OTHER	YES NO	WADLEY NO 10029-3	
	FAILURE MODE-OUT OF SPECIFICATION. DURING SLT LOW TEMPERATURE (-30 DEGREES F) VIBRATION IN Z-AXIS WHILE ENGAGED, THE UNIT LEAKAGE RANGED FROM 200 TO 50,000 SCIM. ALLOWABLE LEAKAGE IS 300 SCIM. REF. S/N 205-2480 AND 205-1321 T.M. 20 43-30.						
	CORRECTIVE ACTION-NONE. REF. RTN NR F-4233-37 AND PRR NO. FR-654-2-260.						091604
PNEUMATIC-A/B TANK PRESS	FR-69M-1974-1 LOX PNEUMATIC STAGING DISCONNECT	UTP-SLT 27-00124-1-3	640421	OTHER	YES NO	S.M. WADLEY NO 10717-13.11	
	FAILURE MODE-OUT OF SPECIFICATION. DURING SLT AMBIENT-TEMPERATURE-VIBRATION, Y-AXIS EXCESSIVE LEAKAGE FROM 60 SCIM TO 125 SCIM WAS OBTAINED. MAXIMUM SPEC LEVEL IS 25 SCIM. REF. S/N 207-1968 AND 212-2237 T.M. NO. 2043-28.						
	CORRECTIVE ACTION-NONE. REF. RTN PRR NR F4254 87 AND PRR NO. FR 654-2-260.						091171
PNEUMATIC-A/B TANK PRESS	A-99-08-3103F BOILOFF VALVE	FAR 27-00598-3	75F 640417	FACTORY	YES NO	AIRESEARCH NO 12256-3-1	
	FAILURE MODE-LEAK. AUDIBLE LEAK WAS NOTED PAST BUTTERFLY. LEAK RATE WAS NOT DETERMINED. FUNCTIONAL TESTS VERIFIED LEAKAGE BUT IT WAS WITHIN ALLOWABLE LIMITS.						
	CORRECTIVE ACTION-CONFIRMED LEAKAGE. EOP 310.17 DATED AUG. 9, 1964, PRESCRIBES A TEST WHEN LEAKAGE IS DETECTED. YES 7 TOOL 1910 27-80968-3 WAS FABRICATED FOR THIS TEST.						
PNEUMATIC-A/B TANK PRESS	69F1098-1 DISCONNECT SEAL-STAGING PNEUMATIC	UTP-SLT 27-00123-3	640417	OTHER	YES NO	S.M. WADLEY NO 10718-9	
	FAILURE MODE-OUT OF TOLERANCE. FOUR OUT OF TOLERANCE LEAKAGES OCCURRED DURING X-AXIS VIBRATION AT A TEMPERATURE OF -30 DEGREES F. UNIT WAS PRESSURIZED TO 80PSI HELIUM. THE AVERAGE LEAKAGE WAS 200 SCIM COMPARED TO THE SPECIFICATION RATE OF 25 SCIM. THE DUSTAINER HALF -3 PROBE SEAL ASSEMBLY WAS FOUND TO BE PARTIALLY DAMAGED.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	3ITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	99-2025-1A FUEL TANK PRESSURE REGULATOR	UTP-SLT 27-00246-29	640416	OTHER		FLUIDGENICS P-246-29
FAILURE MODE-OUT OF TOLERANCE. DURING THE HIGH FLOW SLT TESTING, THE TANK PRESSURE OSCILLATIONS EXCEEDED 3 CPS FOR ONE SECOND. ONE SPIKE IN PRESSURE WENT UP TO 97.4 PSIG. THE UPPER BAND LIMIT IS 97.0 PSIG. A FAILURE ANALYSIS WAS CONDUCTED ON FMR 305.						
CORRECTIVE ACTION-NONE. OUT OF TOLERANCE CONDITIONS RESULTED FROM THE TYPE AND THE SEVERITY OF THE IMPOSED ENVIRONMENTAL AND SPECIMEN DETERIORATION THROUGH USE.						
PNEUMATIC-A/B TANK PRESS	99F-1937-1 DISCONNECT-COUPLING, PNEUMATIC	UTP-SLT 27-00129-9	640415	OTHER	YES AIRTERRA NO 4488-1	
FAILURE MODE-OUT OF TOLERANCE. DURING VIBRATION TESTING AT 180 DEGREES F IN THE ENGAGED POSITION, LEAKAGE WAS 22 SC IN. AT -30 DEGREES F TEMPERATURE, LEAKAGE WAS 140 SCIN. THE SPECIFICATION ALLOWABLE LEAKAGE RATE IS 10 SCIN.						
CORRECTIVE ACTION-A NE. CONTINUE TEST.						
PNEUMATIC-A/B TANK PRESS	99F-1937-1 DISCONNECT-COUPLING, PNEUMATIC	UTP-SLT 27-00129-11	640419	OTHER	YES AIRTERRA NO 4488-3	
FAILURE MODE-OUT OF TOLERANCE. DURING VIBRATION TESTING AT 180 DEGREES F IN THE ENGAGED POSITION, LEAKAGE WAS 22 SC IN. AT -30 DEGREES F TEMPERATURE, LEAKAGE WAS 140 SCIN. THE SPECIFICATION ALLOWABLE LEAKAGE RATE IS 10 SCIN.						
CORRECTIVE ACTION-NONE. CONTINUE TEST.						
PNEUMATIC-A/B TANK PRESS	99-2025-1A FUEL TANK PRESSURE REGULATOR	UTP-SLT 27-00246-29	640414	OTHER	YES FLUIDGENICS NO P-243-6	
FAILURE MODE-STRUCTURAL. DIFFICULTY IN CONTROLLING THE SINE VIBRATION INPUT RESULTED IN ARMATURE OVER TRAVEL. NINE OF THE TWELVE MOUNTING BOLTS WERE FRACTURED. THE BOLTS WERE REPLACED AND TESTING RESUMED. TESTING WAS STOPPED AT 36C PS. THE MOUNTING BOLTS WERE ALL FRACTURED AND THE FUSION PLATE SACKET WAS BLOWN OUT.						
CORRECTIVE ACTION-NONE. OVER DESIGN LEVEL TESTING SUBSTANTIATES THIS KNOWN WEAKNESS FOR VIBRATION TYPE FAILURE.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	PR-99M-1974.1 LOW PNEUMATIC STAGING DISCONNECT	UTP-PRT 27-08124-1/-3	840408	OTHER	YES NO	MADLEY MO 10717-137-11	092371
FAILURE MODE-OUT OF SPECIFICATION, EXCESSIVE LEAKAGE FROM 43 SCIM TO 120 SCIM EXISTED DURING AMBIENT TEMPERATURE-VIBRATION (PRT) IN Y-AXIS WHILE IN ENGAGE POSITION, MAXIMUM SPEC LEVEL IS 26 SCIM, REF. S/N 207-1944 AND 212-2237 T.M. NO. 2843-18.							
CORRECTIVE ACTION-NONE. REF. RTFN PPR NR F. 4236 BT AND PPR NO. PR 854-2-244.							
PNEUMATIC-A/B TANK PRESS	89-2023-1A FUEL TANK PRESSURE REGULATOR	UTP-PRT 27-08246-29	840408	OTHER	YES NO	FLUIDGENICS P-243-6	091791
FAILURE MODE-OUT OF TOLERANCE, DURING THE POST VIBRATION LEAKAGE FILL PERIOD, THE TANK PRESSURE DIPPED BELOW LOWER BAND LIMIT OF 66.5 PSIG, THIS SPECIMEN HAD THE SAME FAILURE MODE REPORTED ON APRIL 8, 1964.							
CORRECTIVE ACTION-NONE. CONTINUED TEST.							
PNEUMATIC-A/B TANK PRESS	22-64-014/DAL1908/L3-4MO-01-331 BOILOFF VALVE	COMPOSITE-FRD/DPL 27-80750-849	331D 840404	2-3	YES NO	CONVAIR	096733
FAILURE MODE-FAIL DURING OPERATION. AFTER THE COUNT SEQUENCE ERRATIC OPERATION OF THE BOILOFF VALVE WAS NOTED ON THE LOP, A SECOND COMMIT SEQUENCE WAS INITIATED AND FURTHER ERRATIC OPERATION NOTED. ERRATIC OPERATION CONTINUED UNTIL APPROXIMATELY 4 MINUTES AFTER LOS DRAIN START. AFTER THIS TIME OPERATION OF THE VALVE WAS NORMAL.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-VALVE WAS REPLACED.							
PNEUMATIC-A/B TANK PRESS	LV-89-08-3178F BOIL OFF VALVE	PAR 27-81448-821	331D 840404	2-3	YES NO		093220
FAILURE MODE-FAIL DURING OPERATION. THE BOILOFF VALVE DID NOT MODULATE WHEN PRESSURE WAS ABOVE MAXIMUM RELIEF PRESSURE, CAUSED BY MISALIGNED BLOTS IN THE GUIDE NUTS ALLOWING SEAT TO BIND AND STICK IN UP POSITION.							
CORRECTIVE ACTION-SURVEY 89-84 REPLACED ALL VALVES WITH UNITS CONTAINING 27-81590-7 GUIDE MOUNTING DIMENSIONAL REQUIREMENTS. ECN 7721 OF JUNE 21, 1964 CREATED A 27-81590-8 GUIDE WITH WIDER SLOTS AND A 45 DEGREE CHAMFER AT THE ENDS. REFERENCE REVISION 9 ON 27-81590.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	LV-90-08-3184F BOILOFF VALVE	FAR 27-80750-848	351D 840404	2-3	YES NO		091172
FAILURE MODE-OUT OF TOLERANCE. FAILED TO MAINTAIN TANK PRESSURE DURING DRAIN SEQUENCE. CAUSE NOT KNOWN. POSSIBLE BO ILOFF RATE WAS NOT SUFFICIENT TO MAINTAIN TANK PRESSURE ABOVE THE 4.7 PSIG MINIMUM DURING DRAIN.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. SITE PERSONNEL NOTIFIED OF ANALYSIS PER TWC SANVAN 4-207 OF APRIL 30, 1964							
PNEUMATIC-A/B TANK PRESS	LV-99-08-3180F STAGING DISCONNECT COUPLING	FAR 27-08122-3	151D 840402	FACTORY	NO NO	MADLEY NO 10713-9	093222
FAILURE MODE-EXTERNAL LEAKAGE. THE DISCONNECT LEAKED EXCESSIVE AT 50 PSI DUE TO A FAULTY TEST TOOL. THE TOOL PROBE WAS UNDERSIZED. A SILICONE SEAL WAS FOUND IN THE UNIT. VENDOR DRAWING SPECIFIED A TEFLON SEAL.							
CORRECTIVE ACTION-NOT CONFIRMED. A TOOL DRAWING CHANGE WAS MADE SPECIFYING IDENTIFICATION NOT TO BE PLACED ON PROBE SEALING SURFACES. TEST WAS ALTERED TO INSTALL NEW VALVES. PER RPT LV-99-08-3785 VENDOR WAS REQUESTED TO USE TEFLON SEALS IN THE 27-08122-3 DISCONNECT VALVES.							
PNEUMATIC-A/B TANK PRESS	PR-88M-1966.1 STAGING DISCONNECT COUPLING	UTP-PRT 27-08120-3	840331	OTHER	YES NO	MADLEY NO 10714-19	090490
FAILURE MODE-OUT OF SPECIFICATION. DURING POST PRT TEMPERATURE VIBRATION PROOF CYCLE, TOTAL LEAKAGE RATE WITH COUPL ING IN ENGAGED POSITION WAS 36 SCIN. ALLOWABLE LEAKAGE IS 25 SCIN. REF. S/N 809-2080 AND 210-0354 T.M. NO. 2843-15.							
CORRECTIVE ACTION-NONE. REF. RPTN PRT NR F-4323-B7 AND PRR NO. PR-854-2-335.							
PNEUMATIC-A/B TANK PRESS	PR-88M-1966.1 STAGING DISCONNECT COUPLING	UTP-PRT 27-08120-1	840331	OTHER	YES NO	MADLEY NO 10714-13	090491
FAILURE MODE-OUT OF SPECIFICATION. DURING POST PRT TEMPERATURE VIBRATION PROOF CYCLE, TOTAL LEAKAGE RATE WITH COUPL ING IN ENGAGED POSITION WAS 36 SCIN. ALLOWABLE LEAKAGE IS 25 SCIN. REF. S/N 809-2080 AND 210-0354 T.M. NO. 2843-15.							
CORRECTIVE ACTION-NONE. REF. RPTN PRT NR F-4323-B7 AND PRR NO. PR-854-2-335.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	99F-1098-1 DISCONNECT-STAGING PNEUMATIC	UTP-PRT 27-08129-3	640325	OTHER	YES NO	B.M. MADLEY NO 10719-9	998379
FAILURE MODE-CONTAMINATION. A PLASTIC CAP WAS LEFT ON THE MATING END OF THE -1 BOOSTER HALF DURING ENGAGEMENT. PART OF THE PLASTIC CAP WAS PUSHED INTO THE -3 SUSTAINER HALF AND STUCK BETWEEN POPPET AND POPPET SEAT.							
CORRECTIVE ACTION-STOP TEST.							
PNEUMATIC-A/B TANK PRESS	99 1934/3-0171 LOX TANK PRESS RELIEF VALVE	UTP-PRT 27-08103-15	640324	OTHER	YES NO	MADLEY NO 10929-15	998379
FAILURE MODE-OUT OF TOLERANCE. DURING PRT ROOM TEMPERATURE RANDOM/SINE VIBRATION TESTING IN 2 AXIS WITH ULLAGE PRESSURE OF 30.3 PSIG AFTER 50 SECONDS OF VIBRATION THE VALVE RELIEVED AND DROPPED THE TANK PRESSURE BELOW MINIMUM TOLERANCE TO 25.5 PSIG. DURING THE POST VIBRATION TEST TOLERANCES WERE ALSO EXCEEDED BY 3 PSIG. REF. 8/W 308-0519, T.M. NO. 43407-2 AND 43407-3.							
CORRECTIVE ACTION-NONE. ECP 7562 PREPARED TO WIDEN SPECIFICATION TOLERANCES. REF. FPR NR F-4207 ST AND FPR NO. PR 8 34-2-209A.							
PNEUMATIC-A/B TANK PRESS	99A1954. LOX TANK PRESSURE RELIEF VALVE	UTP-PRT 27-08103-15	640323		YES NO	MADLEY NO 10929-15	998419
FAILURE MODE-OUT OF TOLERANCE. DURING FULL FLOW RESPONSE THE CRACKING PRESSURE EXCEEDED THE UPPER BAND LIMIT OF 34.7 PSIG WITH PEAK PRESSURE OF 36.0 PSIG. REF. 8/W 308-0519, T.M. NO.1 (JUN3407-1).							
CORRECTIVE ACTION-LATER TESTING INVALIDATED THIS FAILURE. REF. FPR NR F-4202-ST AND FPR NO. 854-2-209.							
PNEUMATIC-A/B TANK PRESS	PR-69M-1969.3 PNEUMATIC RISE-OFF DISCONNECT COUP	UTP-PRT 27-08120-7	640320	OTHER	YES NO	MADLEY NO 10929-3	990939
FAILURE MODE-CONTAMINATION. FOLLOWING PRT LOW TEMPERATURE VIBRATION IN 2-AXIS AS THE GROUND HALF WAS DISCONNECTED FROM THE AIRBORNE HALF, THE POPPET IN THE AIRBORNE HALF STUCK OPEN. PARTICLE CONTAMINATION IS A SUSPECTED CAUSE OF FAILURE. REF. 8/W803-2460 AND 205-1981 T.M. 2849-19.							
CORRECTIVE ACTION-CLEAN AND DRY THE SPECIMEN AND SYSTEM. TESTING CONTINUED. NO CORRECTIVE ACTION REQUIRED. REF. RFP NR F-4206-ST AND FPR NO. PR 854-2-211.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	PRT-TP-1-5479-1REV.C FUEL TANK PRESSURE RELIEF VALVE	UTP-PRT 27-08104-9	840319	60/C	YES NO	B.M. MADLEY 10714-13	990893
FAILURE MODE-OUT OF SPECIFICATION. DURING POST VIBRATION PROOF CYCLE, THE VALVE REPEAT WAS 0.1 TO 0.2 PSI6 BELOW THE SPECIFICATION REQUIREMENTS OF 88.5 PSI6. PRR 5087, S/N 401-1892.							
CORRECTIVE ACTION-NONE. PRR 5087, PRR 654-2-337.							
PNEUMATIC-A/B TANK PRESS	PR-69M-1986.1 STAGING DISCONNECT COUPLING	UTP-PRT 27-08120-1	840319	OTHER	YES NO	MADLEY 10714-13	990892
FAILURE MODE-OUT OF SPECIFICATION. DURING PRT LOW TEMPERATURE VIBRATION IN Z-AXIS EXCESSIVE LEAKAGE RATES RANGING FROM 44 TO 90 SCIN WERE EXPERIENCED WITH COUPLING BOTH ENGAGED AND DISENGAGED. ALLOWABLE LEAKAGE IS 25 SCIN. REF. S/N 209-2080 AND 210-0354 T.M. NO. 2843-12							
CORRECTIVE ACTION-NONE. REF. R7TH PRR NR P-4197-ST AND PRR NO. PR 654-2-202.							
PNEUMATIC-A/B TANK PRESS	PR-69M-1986.1 STAGING DISCONNECT COUPLING	UTP-PRT 27-08120-3	840319	OTHER		MADLEY 10714-13	990893
FAILURE MODE-OUT OF SPECIFICATION. DURING PRT LOW TEMPERATURE VIBRATION IN Z-AXIS EXCESSIVE LEAKAGE RATES RANGING FROM 44 TO 90 SCIN WERE EXPERIENCED WITH COUPLING BOTH ENGAGED AND DISENGAGED. ALLOWABLE LEAKAGE IS 25 SCIN. REF. S/N 209-2080 AND 210-0354 T.M. NO. 2843-12.							
CORRECTIVE ACTION-NONE. REF. R7TH PRR NR P-4197-ST AND PRR NO. PR 654-2-202.							
PNEUMATIC-A/B TANK PRESS	69F-1898-1 DISCONNECT-STAGING	UTP-PRT 27-08128-1	840318	OTHER	YES NO	B.M. MADLEY 10714-13	991798
FAILURE MODE-OUT OF TOLERANCE. DURING LOW TEMPERATURE VIBRATION SCAN, SPECIMEN LEAKAGE WAS 86 SCIN AT A FREQUENCY OF 10 CPS. THE SPECIFICATION RATE IS 25 SCIN.							
CORRECTIVE ACTION-NONE. CONTINUE TESTING.							

GENERAL DYNAMICS
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15 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	99F-1000-1 DISCONNECT-STAGING PNEUMATIC	UTP-PRT 27-06129-3	640310	OTHER	YES	B.M. MADLEY NO 10710-9
<p>FAILURE MODE-CUT OF TOLERANCE. DURING LOW TEMPERATURE VIBRATION SCAN, SPECIMEN LEAKAGE WAS 56 SCIN AT A FREQUENCY OF 10 CPS. THE SPECIFICATION RATE IS 25 SCIN.</p> <p>CORRECTIVE ACTION-NONE. CONTINUE TESTING.</p>						
PNEUMATIC-A/B TANK PRESS	A-99-08-3168F K SEAL	FAR 83-87900-073	147F 640310	FACTORY	NO	HARRISON NO 12140CL6
<p>FAILURE MODE-EXTERNAL LEAKAGE. EIGHT PNEUMATIC UNIONS USING K-SEALS LEAKED AT 3000 PSI. CAUSE NOT KNOWN. FOURTHNESS AND PARALLELISM ARE OF MAJOR IMPORTANCE-NO CHECK WAS MADE FOR EITHER. PRESENCE OF EXCESSIVE FLUOROCARBON CONDITION OF MATING UNION SURFACES UNKNOWN. NO DEFECT IN MATERIAL OR FABRICATION FOUND. THIS IS NOT A K-SEAL FAILURE.</p> <p>CORRECTIVE ACTION-NO MEANINGFUL CORRECTIVE ACTION CAN BE TAKEN. REFERENCE FAR LV-90-09-3151 FOR ANOTHER ANALYSIS OF K-SEALS.</p>						
PNEUMATIC-A/B TANK PRESS	A-99-08-3176F BOIL OFF VALVE	FAR 27-08598-3	90F 640309	WALKER	NO	AIRSEARCH NO 122288-3-1
<p>FAILURE MODE-STRUCTURAL. VALVE SUBMITTED FOR ANALYSIS AFTER DESTRUCTION OF MISSILE BY FIRE. BUTTERFLY CAME OPEN DUE TO A SUDDEN PRESSURE SURGE WITH SOLENOID STILL IN LOCKUP. MOLTEN METAL AND OTHER DEBRIS WERE TRAPPED BETWEEN CLOSING BUTTERFLY AND THE TEFLON BORE. THE PRESSURE SURGE RUPTURED COMPONENT'S PREVENTING FURTHER OPENING OF BUTTERFLY. NO EVIDENCE OF VALVE FRACTURE. THE CASTING WAS STRUCK AND CAVED IN FIRMLY LOCKING BUTTERFLY. OTHER COMPONENTS WERE NEVER ELT DAMAGED TOO. THIS OCCURRED WHILE VALVE WAS EXPOSED TO FIRE. FINAL PRACTICES OCCURRED WHILE VALVE WAS EXPOSED TO FIRE AND WERE BOOT FREE.</p> <p>CORRECTIVE ACTION-IT WAS RECOMMENDED THAT THIS ANALYSIS BE DISTRIBUTED TO PERSONNEL AND AGENCIES INVESTIGATING THE DESTRUCTION OF MISSILE 90F.</p>						
PNEUMATIC-A/B TANK PRESS	A-99-08-3173F RELIEF VALVE-LOW TANK PRESSURE	FAR 27-08103-3	90F 640309		NO	B.M. MADLEY NO 10523-5
<p>FAILURE MODE-FAIL DURING OPERATION. SUBMITTED FOR ANALYSIS AFTER MISSILE DESTRUCTION. NO EVIDENCE WAS FOUND TO SUBSTANTIATE POSSIBLE RELIEF VALVE FAILURE BEFORE DESTRUCTION OF MISSILE. THIS VALVE FAILED DUE TO MISSILE DESTRUCTION. THIS IS A SECONDARY FAILURE.</p>						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-RESULTS OF THIS ANALYSIS WERE FORWARDED TO AIR FORCE PERSONNEL AND AGENCIES CONDUCTING THE INVESTIGATION OF MISSILE 90F.							092877
PNEUMATIC-A/B TANK PRESS	LV-90-08-3102F DUCT-LOW TANK PRESSURIZATION	FAR 7-73313-1	2980 840307	2-3	YES NO	PRECISION SHEET T METAL 7-73313-1	093223
FAILURE MODE-OUT OF TOLERANCE. THE DUCT WAS BULGED OUT, ADJACENT TO A SEAM WELD AT THE FORWARD END OF THE BELLOW ASSEMBLY, DURING INITIAL FABRICATION. NO LEAKAGE WAS RECORDED. A ROLLER SPOT BEAM WELD WAS SUBSTANDARD BUT PROBABLY WOULD NOT FAIL UNDER NORMAL PRESSURES. THE DUCT DID NOT FAIL FUNCTIONALLY.							
CORRECTIVE ACTION-VENDOR INCORPORATED A NEW WELD SCHEDULE JULY 1, 1964. 50/C OUTSIDE PRODUCTION WAS ADVISED OF THE MODE. REFERENCE YEAR 8462-61.							
PNEUMATIC-A/B TANK PRESS	LV-90-08-3177F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	2980 840229	2-4	YES NO	HYDRA ELECTRIC 32018-1	093219
FAILURE MODE-CONTAMINATION. READING WAS 0.05 PSID BELOW THE MINIMUM OF 0.80 PSID IN OPENING THE CONTACTS ON DECREASING PRESSURE. PROBABLE CAUSE WAS CORROSION FROM LACK OF PROPER DRYING AFTER USING TRICHLOROETHYLENE FOR CLEANING.							
CORRECTIVE ACTION-SWITCHES CYCLED THROUGH CALIBRATION ARE NOW CLEANED AND DRIED IN A VACUUM OVEN PER MS-63-24C TO ASSURE THEIR INTERIORS ARE DRY. UNITS ARE THEN PACKAGED.							
PNEUMATIC-A/B TANK PRESS	99F-2023-1A FUEL TANK PRESSURE REGULATOR	UTP-SLT 27-08248-28	840227	OTHER	YES NO	FLUIDGENICS P-243-6	091792
FAILURE MODE-OUT OF TOLERANCE. DURING THE LEAKAGE FILL PERIOD, PRIOR TO INITIATION OF FLOW, TANK PRESSURE WAS 1.6 PSID BELOW MINIMUM LIMIT OF 84.3 PSIG. THIS SPECIMEN HAD THE SAME FAILURE MODE REPORTED ON FEBRUARY 5, 6 AND 27, 1964.							
CORRECTIVE ACTION-NONE. CONTINUE TEST. SPECIMEN DETERIORATION WITH TESTING CAUSED THE COMMAND SHIFT IN TANK PRESSURE.							
PNEUMATIC-A/B TANK PRESS	LV-90-08-3172F SOLENOID-LOW BOIL OFF VALVE	FAR 27-08540-001	840224	FACTORY	YES NO	INC MAGNETICS 80473-3	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. SOLENOID WOULD NOT OPERATE AFTER BEING ENERGIZED FOR 30 MINUTES AS REQUIRED BY C.O.P. 510.11.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VEHICLE PART NO	
CORRECTIVE ACTION-TESTING REQUIREMENTS OF DRAWING 27-01440 WERE CHANGED BY REVISION Y TO SPECIFY 24 RATHER THAN 23 VOLTS. TEMPORARY CHANGE AUTHORIZATION A TO E.O.P. 310.11 ACCOMPLISHED SIMILAR ACTION. PER BAR LV-9-08-3767 ALL FUNCTIONAL TESTING WILL BE PER INITIAL ACCEPTANCE TEST REQUIREMENTS SPECIFIED ON THE SPECIFICATION CONTROL DRAWING. IN ANSWER TO BAR LV-99-08-3782 A MEMO OF AUGUST 23, 1944 INFORMED INSPECTION OF THIS PROBLEM AND REQUESTED THE ENTIRE 27-01440 SENSOR ASSEMBLY BE FORWARDED FOR FUTURE FAILURE.							
PNEUMATIC-A/B TANK PRESS	3LV-99-08-3171F BOILOFF VALVE	FAR 99-80500-1	940212	FACTORY	YES NO		090700
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. VALVE CONTROLLER WOULD NOT LOCK UP THE VALVE. ALSO EXTERNAL LEAKAGE PAST WELD. BOTH WERE CAUSED BY THE BOIL-OFF VALVE BEING SUBJECTED TO ENVIRONMENTAL IN EXCESS OF DESIGN REQUIREMENTS. COMPONENT WAS UNDERGOING A STRESS LIMIT TEST.							
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN AT THIS TIME. PREVIOUS ACTION RESULTED FROM BAR LV-90-08-3664, FAR LV-90-08-3156. THIS INCLUDED DISASSEMBLY OF 3 STOCK SOLENOID SENSORS. NO LOW SAFE LUBRICANT WAS FOUND. PERSONNEL USING THE LUBRICANT WERE INSTRUCTED IT TO APPLY TO FEMALE THREADS ONLY. THIS WILL PREVENT LUBRICANT FROM GETTING ON THE OY NALIC SURFACES.							
PNEUMATIC-A/B TANK PRESS	89F-1937-1 DISCONNECT-COUPLING, PNEUMATIC	UTP-PRT 27-08128-11	940211	OTHER	YES NO	AIRTERRA NO 4498-3	090083
FAILURE MODE-OUT OF TOLERANCE. DURING HIGH AND LOW TEMPERATURE VIBRATION TESTING, EXTERNAL LEAKAGE IN THE ENGAGED POSITION WAS 280SCIN. THE SPECIFICATION LEAKAGE RATE IS 10 SCIN.							
CORRECTIVE ACTION-NONE. CONTINUE TEST.							
PNEUMATIC-A/B TANK PRESS	89F-1937-1 DISCONNECT-COUPLING, PNEUMATIC	UTP-PRT 27-08128-9	940211	OTHER	YES NO	AIRTERRA NO 4498-1	090082
FAILURE MODE-OUT OF TOLERANCE. DURING HIGH AND LOW TEMPERATURE VIBRATION TESTING, EXTERNAL LEAKAGE IN THE ENGAGED POSITION WAS 280SCIN. THE SPECIFICATION LEAKAGE RATE IS 10 SCIN.							
CORRECTIVE ACTION-NONE. CONTINUE TEST.							
PNEUMATIC-A/B TANK PRESS	89A2143 BOILOFF VALVE-SOLENOID	UTP-BLT 99-80500-1	940207	CONVAIR	YES NO	NO/A	
FAILURE MODE-ELECTRICAL OPEN. FOLLOWING THE ALT VIBRATION TEST AXIS 11 THE UNIT COULD NOT BE LOCKED UP. THIS FAILURE WAS CAUSED BY AN OPEN CIRCUIT TO THE ACTIVATING SOLENOID. REF. PPR NO P-434781, 8/N 308-008.							
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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-NONE. SINCE THE UNIT PASSED THE PRT TESTS AND FAILED THE SLT TESTS. REF FRR FR 854-2-180.						892643
PNEUMATIC-A/B TANK PRESS	TP-1-3479-1 FUEL TANK PRESS. RELIEF VALVE	UTP-PRT 27-08104-9	840207	60/C	YES B.M. MADLEY NO 10526-9		890683
FAILURE MODE-OUT OF TOLERANCE. DURING THE 1ST FULL FLOW RESPONSE TEST THE UNIT EXCEEDED THE UPPER LIMIT BY 0.5 TO 1.0 PSIG (WITHOUT DUCT). TANK PRESSURE WAS 0.4 TO 0.5 PSIG BELOW FULL FLOW PRESSURE WHEN VENT DUCT WAS ON THE SPECIMEN ALLOWABLE LIMIT IS 71.7 PSIG. FRR 3089, 8/M 307-0513 PRT LOT NO. 1.							
CORRECTIVE ACTION-1. RETEST AT VENDOR FACILITY TO CONFIRMED FAILURE. 2. LOT 1 UNITS (SLV) WERE RECYCLED TO VENDOR FOR FULL FLOW TESTS. 3. LOT 2 PRT SAMPLE TO BE TESTED IMMEDIATELY. 4. LOT 2 PRT PASSED SUCCESSFULLY. UNITS ARE BEING INSTALLED ON MISSILES. FRR 854-2-185 SLV FRR 854-2-189 SUPPLEMENT LETTER A A MEMO DATED 5-7-84.							
PNEUMATIC-A/B TANK PRESS	89A2143 BOILOFF VALVE	UTP-SLT 89-80200-1	840208	60/C	YES 60/C NO		891732
FAILURE MODE-EXTERNAL LEAK. DURING SLT VIBRATION ON AXIS 11 (2) THE UNIT LEAKAGE RATE WAS GREATER THAN THE 0.03 SCF/M OF GAGE ALLOWED. LEAKAGE RATES WERE UP TO 2.2 SCFM. PART OF THE LEAKAGE WAS CAUSED BY A 0.01 SCFM LEAK IN A SEAM WELD. REF. FRR FR F-4148 ST. 3/M 308-0008.							
CORRECTIVE ACTION-TEST CONTINUED. REF. FRR FR 854-2-180.							
PNEUMATIC-A/B TANK PRESS	89F1962 HELIUM CHANGEOVER VALVE MOTOR	UTP-PRT 27-08118-13	840208	OTHER	YES ROBERTSON PUL NO TON 1098-24001		890934
FAILURE MODE-STRUCTURAL. FOLLOWING FIRST AXIS VIBRATION PRT, VALVE REQUIRED 1.3 SECONDS TO CLOSE. REQUIRED TIME IS 0.75 SECONDS. THERE WAS NO FLOW. STATIC PRESSURE WAS 5075 PSIG. OTHER ATTEMPTS TO OPERATE, SHOWED EXTREMELY NOISY CURRENT TRACE. MOTOR MOUNTING SCREWS WERE LOOSE-SOME BROKEN. FRR 4133.							
CORRECTIVE ACTION-SHOP TEST. REDESIGN MOTOR MOUNTING. ECF IN WORK. FRR 854-2-182 SUPPLEMENT A.							
PNEUMATIC-A/B TANK PRESS	89-2025-1A FUEL TANK PRESSURE REGULATOR	UTP-PRT 27-08248-29	P-243-8 840203	OTHER	YES FLUIDMECH NO		
FAILURE MODE-OUT OF TOLERANCE. DURING THE POST VIBRATION LEAKAGE FILL PORTION OF THE TEST, THE TANK PRESSURE WENT 9 BELOW THE LOWER BAND LIMIT BY 0.88 PSIG. DURING THE FLOW PORTION, FLOW WAS BELOW BAND LIMIT FOR 16 SECONDS.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI DTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-NONE. CONTINUE TEST. DOWNWARD SHIFT IN PRESSURE MAY HAVE RESULTED FROM VIBRATION DETERIORATION OF THE SPECIMEN.						091703
PNEUMATIC-A/B TANK PRESS	LV-A9-08-3108-F LOX TANK PRESSURE REGULATOR	FAR 27-08101-23	1400 840202	FACTORY	YES B.M. MADLEY NO 10704-35		090803
	FAILURE MODE-OUT OF TOLERANCE. SIMULATED LOX ULLAGE PRESSURE FELL TO 29.5 PSIG DURING LEAKAGE FILL. ALLOWABLE IS 30 .2 PLUS OR MINUS 0.4 PSIG. CAUSE NOT KNOWN. NO REAR, DEFECT OR DISCONTINUITY WERE FOUND AT DISASSEMBLY.						
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. DESIGN AND RELIABILITY WILL BE CALLED IN IF ANOTHER SUCH FAILURE OCCURS. THIS SHOULD RESULT IN A MORE SUCCESSFUL ANALYSIS. NO FURTHER ACTION TAKEN.						090804
PNEUMATIC-A/B TANK PRESS	LV-A9-08-3189-F LOX TANK PRESSURE REGULATOR	FAR 27-08101-23	3700 840131	FACTORY	YES B.M. MADLEY NO 10704-3		
	FAILURE MODE-OUT OF TOLERANCE. SIMULATED LOX ULLAGE PRESSURE FELL TO 29.5 PSIG DURING A LEAK-FILL. ALLOWABLE PRESSURE IS 30.2 PLUS OR MINUS 0.4 PSIG. NO REAR, DEFECT, OR DISCREPANCY WAS FOUND AT DISASSEMBLY.						
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. DESIGN AND RELIABILITY PERSONNEL WILL BE CALLED IN IF ANOTHER SUCH FAILURE OCCURS. THIS SHOULD RESULT IN A MORE MEANINGFUL ANALYSIS. NO FURTHER ACTION TAKEN. VEHICLE 3500 WAS 1370.						090806
PNEUMATIC-A/B TANK PRESS	09A1934.1 LOX TANK PRESSURE RELIEF VALVE	UTP-SLT 27-08103-9	840129	GO/C	YES B.M. MADLEY NO 10323-9		
	FAILURE MODE-FAIL DURING OPERATION. DURING Y AXIS VIBRATION AT 1800 CPS WITH INPUT VIBRATION 36 G-RMS AND OUTPUT VIBRATION 95 G-RMS THE VALVE CRACKED AT 30.7 PSIG AND RESEATED AT 29.0 PSIG. WHEN THE TANK PRESSURE WAS RAISED TO 30.7 PSIG, THE VALVE CRACKED AND WOULD NOT RESEAT. THE SECOND CRACKING WAS AT 1800 CPS WITH INPUT VIBRATION 36 G-RMS. GA 3 TEMPERATURE WAS 450 DEGREES F. FAILURE ANALYSIS OF THE PART REVEALED PRIMARY CONTROLLER POPPET STUCK OPEN DUE TO 6 ALLING BETWEEN SHAFT AND MOLD.						
	CORRECTIVE ACTION-THE VENDOR AGREED TO IMPROVE HIS QUALITY CONTROL. REF. FPR NR F-4103-BT AND FPR NO. PR-0354-E-177.						
PNEUMATIC-A/B TANK PRESS	HELIUM CHANGE OVER VALVE	FAR 27-08116-11	1900 840129	12	YES ROBERT SHAW CO YES HYDROL 3 1096-28001		
	FAILURE MODE-FAIL DURING OPERATION. AT SWITCH TO INTERNAL, THE INDICATOR LIGHT CAME ON BUT WENT OUT 3/4 SECOND LATE R. INTERNAL LEAKAGE OCCURRED AFTER VALVE CLOSED. ASSOCIATED ELECTRICAL EQUIPMENT DID HAVE DISCREPANCIES. SEE FAR LV-00-03-286 AND FAR LV-A9-14-211.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SIZE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. VCAR 8184-84, IN ANSWER TO RAR LY-98-08-3770, STATES THAT THE ASSEMBLY PRO CEDURE FOR PUTTING OUTLET PORT ON THE BODY HAS BEEN CHANGED TO AGREE WITH THE ABOVE RAR AS OF APRIL 6, 1984, EFFECTI VE ON 3/M 0980.						008285
PNEUMATIC-A/B TANK PRESS	69F1982 HELIUM CHANGEOVER VALVE	UTP-PAT 27-08118-13	840126	OTHER	YES NO	ROBERTSHAW FUL TON 1098-24001	001762
	FAILURE MODE-INTERNAL LEAK. INTERNAL LEAKAGE AFTER 3 MINUTES SEATING PERIOD WAS 885 CC/MIN. AT 3000 PSIG INLET. (AL LOWABLE LEAKAGE IS 500 CC/MIN.). TEMPERATURE WAS -230 DEGREES F. 8/M 308-0943.						
	CORRECTIVE ACTION-NONE. FRR 854-2-152.						
PNEUMATIC-A/B TANK PRESS	69F1982 HELIUM CHANGEOVER VALVE	UTP-PAT 27-08118-13	840126	OTHER	YES NO	ROBERTSHAW FUL TON 1098-24001	001761
	FAILURE MODE-INTERNAL LEAK. INTERNAL LEAKAGE AFTER 3 MINUTES WAS 2225 CC/MIN. (ALLOWABLE LEAKAGE IS 500 CC/MIN.) TE MPERATURE WAS -300 DEGREES F. FRR 4134 8/M 308-0943.						
	CORRECTIVE ACTION-NONE. FRR 854-2-152.						
PNEUMATIC-A/B TANK PRESS	69A1954.1 LOX TANK PRESSURE RELIEF VALVE	UTP-OLT 27-08103-9	840127	60/C	YES NO	MADLEY 10585-9	002418
	FAILURE MODE-OUT OF TOLERANCE. DURING 2 AXIS VIBRATION AT 325 CPS WITH INPUT VIBRATION 296 AND OUTPUT VIBRATION 336 THE VALVE CRACKED AT 30.6 PSIG AND RESEATED AT 30.4 PSIG. THESE VALUES WERE BELOW THE ALLOWABLE LIMITS. REF. 8/M 20 5-0489, T.M. NO.3.						
	CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	69F2028-1 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	840125	60/C	YES NO	B.M.MADLEY 10586-9	
	FAILURE MODE-OUT OF TOLERANCE. CRACK AND RESEAT PRESSURE WAS BELOW SPECIFICATION DURING VIBRATION, 2-AXIS, 770 CPS DINE VIBRATION 28 GMS INPUT, 45GMS OUTPUT. THE SPECIMEN CRACKED AT 86.8 PSIG AND RESEATED AT 88.1 PSIG. MINIMAL IS 84.5 ±.5 TO ±.0 PSIG. FRR 4121 8/M 307-0812.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-ECP 7582 LOWERED VIBRATION LEVELS TO 20 GMS AT 770 CPS. FRR 854-2-141 SLV.							090947
PNEUMATIC-A/B TANK PRESS	A-99-08-3186F CHECKVALVE-FUEL TANK PRESSURE	FAR 27-08114-1	138F 640124	FACTORY		HADLEY 10560-1	094361
FAILURE MODE-STRUCTURAL. LEAKING THRU CRACKS AT BOTH ENDS OF VALVE ATTRIBUTED TO CORROSION OF GRAIN BOUNDARIES, UNRELIEVED STRESS DISTORTION FROM EXTRUSION PROCESS AND HIGH LOAD ON END SURFACES FROM HIGH TORQUE. VALVE HAD BEEN USED ON MISSILE 5 E FOR APPROXIMATELY TWO YEARS PRIOR TO USAGE ON 138F.							
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN SINCE FAILURE IS ATTRIBUTED TO A COMBINATION OF FACTORS. NO FURTHER ACTION DEEMED NECESSARY.							
PNEUMATIC-A/B TANK PRESS	69F-1894-1 DISCONNECT-STAGING, PNEUMATIC	UTP-PRT 27-08125-3	640124	OTHER	NO	B.M. HADLEY NO	091707
FAILURE MODE-STRUCTURAL. DURING OSCILLATION (PLUS OR MINUS 0.25 INCHES FROM NOMINAL ENGAGED POSITION) UNIT WAS DAMAGED DUE TO OVERENGAGEMENT. TEST FIXTURE DIMENSIONS WERE INCORRECT.							
CORRECTIVE ACTION-CORRE. INFORMATION CONCERNING THE NOMINAL ENGAGEMENT DIMENSIONS WAS TRANSMITTED TO THE TESTING AGENCY.							
PNEUMATIC-A/B TANK PRESS	LV-99-08-3184C RISE OFF DISCONNECT COUPLING, MELI UN SUPPLY, O-RING	FAR 27-08128-9	2360 640116	FACTORY	NO	ROVLIN NO 4488-1	094358
FAILURE MODE-NONE. RUBBER CURE DATE EXPIRED PER MP8 17.01. THE COUPLING WAS FUNCTIONALLY TESTED. NO FAILURE OCCURRED.							
CORRECTIVE ACTION-NO FAILURE-CORRECTIVE ACTION WAS CANCELLED. NO FURTHER ACTION. RUBBER CURE DATE EXPIRATION IS NOT CONSIDERED A FAILURE.							
PNEUMATIC-A/B TANK PRESS	LV-99-08-3180F MANUAL SHUTOFF VALVE-SEAL	FAR 27-08108-1	1990 640115	IE	YES	PEACOCK NO 51380-1-X	
FAILURE MODE-INTERNAL LEAKAGE. DID NOT RETAIN PRESSURE-A TWO PSIG CHANGE IN 30 MINUTES. CAUSE-BUTTERFLY SEAL WAS PLACED IN 9 PLACES. DUE TO BEING UNDER CURED AND BECAUSE OF ITS INHERENTLY LOW PHYSICAL PROPERTIES.							
CORRECTIVE ACTION- PER 60/A CORRESPONDENCE OF MAY 4, 1964-IN ANSWER TO RAR LV-98-06-8775-60/A DID NOT TAKE ACTION 7							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
O CHANGE MATERIAL FROM L3-65 TO TOWHER AN37278 BECAUSE OF INSUFFICIENT EVIDENCE OF SEAL FAILURES TO INDICATE ANY PR BLEM.							898336
PNEUMATIC-A/B TANK PRESS	LV-90-08-3167F RESTRICTOR-LOR PRESSURE REGULATOR SENSING	FAR 27-08187-3	2850 840109	WTR	YES DEL NO 10046		898669
FAILURE MODE-OUT OF TOLERANCE. FLOW RATE OF 8.55 SCFH IS BELOW LOWER LIMIT ALLOWED. ALLOWABLE IS 2.89 TO 2.90 SCFH AT 3000 PSIG. CAUSE ATTRIBUTED TO THE ORIFICE DIMENSIONS. EXCESS LUBRICANT FOUND.							
CORRECTIVE ACTION-VENDOR ADDED A CAUTION NOTE AGAINST EXCESS LUBRICANT TO A TRAVELER THRU THE CLEANING PROCESS. FIE LD PERSONNEL TO REMARK STOCK RESTRICTORS TO ALLOW MID BAND FLOW. 27-81154 CHG (G), AND 27-82310 CHG (B) WERE ISSUED TO WTR AND TO ETR PERMITTING PCU TO OPERATE ONE PSIG HIGHER. IF RESTRICTOR IS AT LOWER PORTION OF FLOW BAND.							
PNEUMATIC-A/B TANK PRESS	CT-49-08-053P STAGING DISCONNECT SEAL, SUSTAINER FUEL PRESSURE LINE.	FAR 27-08124-3	1350 840107	FACTORY	YES B.M.MADLEY NO 10717-11		898673
FAILURE MODE-EXTERNAL LEAK. LEAKAGE OF 2500 C.C. PER MINUTE. ALLOWABLE LOSS IS 409 C.C. PER MINUTE. PROBABLE CAUSE WAS ONE OR MORE METALLIC CHIPS ON THE DYNAMIC TEFLON SEAT. A METAL PARTICLE WAS FOUND INSIDE THE COMPONENT.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. IT WAS RECOMMENDED THAT PERSONNEL BE CAUTIONED ABOUT HANDLING PARTS DISPOS ITIONED FOR FAILURE ANALYSIS TO PREVENT LOSS OF EVIDENCE. FACTORY PERSONNEL ARE TO BE INFORMED OF THIS ANALYSIS AND ARE TO VERIFY THAT ALL DISCONNECTS ARE CLEAN PER SPEC REQUIREMENT BEFORE MATING THE TWO VALVES.							
PNEUMATIC-A/B TANK PRESS	69F1942 HELIUM CHANGE-OVER VALVE	UTP-PAT 27-08118-13	840103	OTHER	YES ROBERTSHAW FUL NO TON 1096-24001		898993
FAILURE MODE-OUT OF TOLERANCE. FLOW RATE WAS 1.29 LBS/SEC. SPECIFICATION IS LBS/SEC. PRESSURE DROP WAS 20 PSID. SPEC IFICATION 15PSID. INLET PRESSURE WAS BELOW 3000 PSIG FOR FIRST 5 SECONDS. INLET TEMPERATURE VARIED FROM -320 TO -835 DEGREES F IN FIRST 22 SECONDS. SPECIFICATION IS -300 PLUS OR MINUS 20 DEGREES F FOR 15 SECONDS.							
CORRECTIVE ACTION-CONDITIONS SUBMITTED WERE RESULT OF FIRST FLOW TEST. SINCE 3 MORE FLOW TESTS ARE TO FOLLOW, THE A VERAGE PARAMETERS WILL BE SATISFACTORY FOR TEMPERATURE, FLOW TIME AND FLOW RATE. AR 658-B-152.							
PNEUMATIC-A/B TANK PRESS	PET-TP-1-2479.1 FUEL TANK PRESS RELIEF VALVE	UTP-PEC 27-08104-3	840108	60/C	YES B.M.MADLEY NO 10328-7		
FAILURE MODE-OUT OF TOLERANCE. CRACK AND RESEAL PRESSURE WAS BELOW SPEC DURING VIBRATION 2-AXIS, 750 TO 775 CPS SIN C. OUT OF TOLERANCE WAS 0.9 PSIG BELOW REQUIRED RESEAL. S/N 300-0891.							

15 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DATA SOURCE PART NUMBER	VEHICLE DATE DIF	DATE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
							001727
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	LV-98-08-3161F LOX TANK PRESSURE RELIEF VALVE-BEA 27-08103-3 LANT	FAR	1998 831231	2	COMPLETE	YES B.H.HADLEY NO 10325-9	000333
FAILURE MODE-INTERNAL LEAKAGE. LEAKAGE NOTED AT SENSING CONTROLLER INLET PORT CAP JOINT. LEAK RATE LATER FOUND TO BE WITHIN TOLERANCE-500 SCIN. WHEN USING HELIUM. VALVE FAILED TO OPERATE DURING ANALYSIS WHEN THE SEAT ADHERED TO THE POPPET ASSEMBLY DUE TO PRESENCE OF MOLYBDENUM DISULFIDE MIXED WITH MOISTURE.							
CORRECTIVE ACTION- IN ANSWER TO RAR LV-98-08-3773 THE MISSILE WOULD NOT BE DAMAGED UNLESS ANOTHER FAILURE OCCURRED IN CONJUNCTION WITH A FAILED CLOSED RELIEF VALVE. AN EXPENSIVE E.C.P. TO CHANGE LUBRICANT IS NOT WARRANTED, PER SLV DESIGN MEMO OF JULY 2, 1964. IN ANSWER TO RAR 8339-64 OF MAY 13, 1964. VENDOR WAS TO INSURE EXCESS LUBE IS REMOVED BEFORE ASSEMBLY. A MORE CAREFUL INSPECTION WAS INITIATED.							
PNEUMATIC-A/B TANK PRESS	LV-98-08-3165F PRESSURE REGULATOR-LOX TANK/ORIFIC	FAR	1990 831227	12	YES B.H.HADLEY NO 10704-33		000338
FAILURE MODE-OUT OF TOLERANCE REGULATOR ALLOWED EXCESSIVE PRESSURE OVERSHOOT FROM 26.6 TO 27.4 PSIG, AT CHANGE TO 1 INTERNAL PRESSURE, TO THE SIMULATED LOX TANK ULLAGE. CAUSE EXCESSIVE FLOW RESTRICTION AT THE SHUT OFF ORIFICE. RESTRICTION RESULTED FROM INCORRECT ADJUSTMENT OF ORIFICE. ADJUSTMENT HAD BEEN ALTERED SINCE THE NOV 1963 FUNCTIONAL TESTS							
CORRECTIVE ACTION- INSPECTION WAS FURNISHED THE COLOR AND LOCATION OF VENDORS TORQUE PAINT. TEST PROCEDURES WERE NOT TO BE PERFORMED IF VENDOR TORQUE PAINT IS MISSING. THIS IS IN ANSWER TO RAR-LV-98-08- 3782 AND -3777.							
PNEUMATIC-A/B TANK PRESS	99A1954.1 LOX TANK PRESSURE RELIEF VALVE	UTP-PRT 27-08103-9	831227	60/C	YES HADLEY NO 10325-9		002417
FAILURE MODE-OUT OF TOLERANCE. DURING FULL FLOW RESPONSE TEST THE OSCILLATIONS OF TANK PRESSURE AFTER INITIAL SPIKE WERE ABOVE THE MAXIMUM ALLOWABLE TANK PRESSURE. OF 34.7 PSIG. REF. S/N 805-0489, T.M. NO.1.							
CORRECTIVE ACTION-PROCEDURE REVISED TO CONSIDER THE TANK PRESSURE AS THE MEAN OF THE RECORDED OSCILLATIONS.							
PNEUMATIC-A/B TANK PRESS	99A2848 FUEL TANK PRESSURE RELIEF VALVE	UTP-PRT 27-08104-8	831219	60/C	YES HADLEY NO 10318-9		
FAILURE MODE-OUT OF TOLERANCE. DURING PET OPERATING VIBRATION TEST THE SPECIMEN FAILED TO CRACK ONCE AND HAD A LOW REPEAT PRESSURE RANGING FROM 64.4 TO 66.8 PSIG VS 66.8 PSIG MINIMUM ALLOWABLE. REF. S/N 807-0810 T.M. NO 18.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRJ OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-ECP 7582 REDEFINES VALVE RANGES. REF. FPR NR P-5041-BT, CAR P-5041-BC-1 AND FPR NO PR 634-2-22.						092398
PNEUMATIC-A/B TANK PRESS	69A3099 LOX TANK PRESSURE RELIEF VALVE	UTP-PET 27-08103-9	631219		YES NO	HADLEY 30323-9	09C983
	FAILURE MODE-OUT OF TOLERANCE. DURING OPERATING VIBRATION IN X AND Y-AXIS, THE VALVE FAILED TO RESET AT PROPER PRESSURES. OUT OF TOLERANCE RANGE FROM 23.0 TO 31.1 PSIG. EXCESSIVE EXTERNAL LEAKAGE WAS ALSO OBTAINED. REF. S/W 509-03 28.1 N-MO-1 AND FPR NR P-5042-3MT.						
	CORRECTIVE ACTION-TESTING STOPPED. EXCESSIVE LEAKAGE CONTINUED AFTER DEPRESSURIZING AND REPRESSURIZING THE UNIT. THE E BOOK SPECIFICATION WAS CHANGED. ECP 7582. REF. FPR PR-634-E-018 AND FPR 5042.						092293
PNEUMATIC-A/B TANK PRESS	27A3082 LOX TANK RELIEF AND SHUTOFF VALVE	UTP-PET 27-08396-3	631216	60/C	YES NO	CALMEC 271BASIC	
	FAILURE MODE-EXTERNAL LEAK. DURING THE Y-AXIS VIBRATION SWEEP AND AT A VIBRATION FREQUENCY OF 220 TO 240 CPS THE UG IT HAD A LEAKAGE OF 3460 SCIM. 2900 SCIM IS MINIMUM ALLOWABLE. REF. TASK HISTORY.						
	CORRECTIVE ACTION-NONE. CONTINUE TEST.						091993
PNEUMATIC-A/B TANK PRESS	69C-1993 PRESSURE TRANSDUCER	UTP-BLT 27-08109-1	631213	60/C	YES NO	CRESCENT 89-5001	
	FAILURE MODE-OUT OF TOLERANCE. DURING PROOF CYCLE FOLLOWING BLT X-AXIS VIBRATION AT -85 DEGREES F THE OUTPUT VOLTAGE OF THE SPECIMEN WAS 1.427 VOLTS. ALLOWABLE ERROR BAND IS 1.389 TO 1.419 VOLTS. REF. S/W 503-0343 T.M.						
	CORRECTIVE ACTION-NONE. REF. RTFM-FPR NR P-4033-BT AND FPR NO. PR-634-2-091.						090674
PNEUMATIC-A/B TANK PRESS	CT-99-08-048P COUPLING MUT-FUEL SENSING LINE	FAR AN818-04	1350 631212	FACTORY	NO	GLOBE AIRCRAFT	
	FAILURE MODE-STRUCTURAL. SHOULDER AREA APPEARED CRACKED.						
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. IT IS RECOMMENDED THAT AT TIME OF INSTALLATION THE SHOULDER AREAS OF THE MUTS SHOULD BE EXAMINED FOR DEFECTS.						

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	09A2948 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	091212	6D/C	YES NO	HADLEY NO 10528-9
FAILURE MODE-OUT OF TOLERANCE. DURING PET EXTERNAL LEAK TEST II THE SPECIMEN LEAKAGE RATE WAS 42 SCIM AT 20 PSIG VS 25 SCIM ALLOWABLE. LEAKAGE WAS FROM THE CONTROLLER BLEED PORTS. REF 8/N 307-0410 T.M. NO 9.						
CORRECTIVE ACTION-ECP 7582 REDEFINES BASIC REQUIREMENTS OF RELIEF VALVE. REF. FPR NR P-5041-8T, CARR P-3041-9C-1, A NO FAR NO FR 894-2-022.						
PNEUMATIC-A/B TANK PRESS	63C-1993 PRESSURE TRANSDUCER	UTP-PRT 27-08109-1	091203	6D/C	YES NO	CRESCENT NO 88-5001
FAILURE MODE-OUT OF TOLERANCE. EOP REVEALED LACK OF SAFETY WIRING ON ELECTRICAL CONNECTOR, NO RI OR PROOF PRESSURE TEST. REF. 3/N 308-0423 T.M.						
CORRECTIVE ACTION-IR SPECIMEN AND DELIVER TO MMR CRIB FOR DISPOSITION. REF. RTFN-FPR NR P-4087-8T AND FPR-FR 894-2-091.						
PNEUMATIC-A/B TANK PRESS	8U-4NO-03-158 PNEUMATIC-A/B TANK PRESS	COMPOSITE-FRD/DPL	158D 631204	8-2	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOZ TANK DID NOT PHASE TO FLIGHT PRESSURE UNTIL 39 SECONDS AFTER C ORBIT START. REASON UNKNOWN.						
SYSTEM EFFECT-OPERATION STARTS TO LATE. LOZ TANK WAS LATE IN PRESSURIZING.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	L7-9C-08-3137C PISTONATOR-LOZ PRESSURE REGULATOR	FAR 27-08167-3	091203	UTR	YES NO	DEL NO 10082
FAILURE MODE-OUT OF TOLERANCE OUTPUT LOW. PART WAS REMOVED AND REINSTALLED. CAUSE NOT KNOWN. NO ANALYSIS.						
CORRECTIVE ACTION-NO ANALYSIS BECAUSE PART WAS NOT RECEIVED AT 60/C. PART REMOVED AT SITE AND PLACED BACK INTO SER VICE.						

GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PIRT NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	LV-90-08-3102F GASKET-HELIUM BOTTLE ADAPTOR SEAL	FAR 94-18013-030	2270 031129	WTR	YES NO	ADVANCED PRODU CT	096337
FAILURE MODE-EXTERNAL LEAKAGE. LEAK PAST SEAL. PROBABLE CAUSE WAS THE DIFFERENCES IN CROSS SECTION THICKNESS. GASKET WAS EITHER DAMAGED BEFORE OR DURING INSTALLATION. MATING COMPONENTS WERE NOT AVAILABLE FOR ANALYSIS.							
CORRECTIVE ACTION-60/C INFORMED 311E PERSONNEL TO TAKE PRECAUTIONS WHEN HANDLING GASKETS OF THIS TYPE AND WHEN TIGHTENING COMPONENTS USING THIS TYPE OF SEAL.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3159C LOX TANK PRESSURE REGULATOR	FAR 27-08101-43	81E 031129	WTR	YES NO	FLUIDGENICS P838-2	096356
FAILURE MODE-CONTAMINATION. FOUND AFTER AUDIBLE LEAKAGE AT THE BOOSTER DISCONNECT.							
CORRECTIVE ACTION-NO ANALYSIS MADE BECAUSE NO FUNDS WERE AVAILABLE FOR THIS TASK. THIS APPLIES ALSO TO 27-08124-1 AND -3 DISCONNECTS. NO FURTHER ACTION.							
PNEUMATIC-A/B TANK PRESS	SP-PL-08-3163-F LOX TANK PRESSURE RELIEF VALVE-POP PET	FAR 27-08103-9	703802 031123	PT. LOMA	YES NO	B.M. HADLEY 10325-9	096864
FAILURE MODE-EXTERNAL LEAKAGE-HELIUM LEAKAGE REDUCING LOX TANK PRESSURE 8 PSI PER HOUR. LEAKING PAST PRIMARY CONTROL POPPET. LEAKAGE WAS WITHIN TOLERANCE. SMALL FIBER FOUND ON POPPET SEAT ALLOWED THE PRESSURE LOSS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. AN AVO OF APRIL 21, 1966 NOTIFIED POINT LOMA PERSONNEL OF FAR ANALYSIS RESULTS. THE AVO RECOMMENDED A LEAKAGE CHECK BE MADE BEFORE REJECTING COMPONENTS.							
PNEUMATIC-A/B TANK PRESS	09A2846 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	031110	60/C	YES NO	HADLEY 10328-9	092400
FAILURE MODE-OUT OF TOLERANCE. DURING PET EXTERNAL LEAKAGE TEST 3 THE SPECIMEN EXCEEDED LEAKAGE AS FOLLOWS. 83 SCIN AT 20 PSIG VS 23 SCIN ALLOWABLE, 33 A SCIN AT 47 PSIG VS 300 SCIN ALLOWABLE, 348 SCIN AT 89.5 PSIG VS 300 SCIN ALLOWABLE. LEAKAGE WAS FROM THE CONTROLLER BLEED PORTS. REF 8/N 307-0510 T.M. NO 8.							
CORRECTIVE ACTION-EPC 7492 REDEFINED BASIC REQUIREMENTS OF RELIEF VALVE. REF FOR NR 7-3011-87 AND FOR NO 833-8-082.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP TIME	SITE DIP TIME	PRI QTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	69A2946 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	631119	60/C	YES NO	MADLEY 10328-9	892401
FAILURE MODE-OUT OF TOLERANCE. DURING PET LIFE TEST THE SPECIMEN FAILED PROOF CYCLE B DURING 100, 200 AND 400 CYCLE S. FAILURES OF INITIAL SPIKE RANGE FROM 72.3 TO 72.5 PSIG VS 72.2 ALLOWABLE AND IN RESET 69.3 TO 69.3 PSIG VS 69.3 P SIG ALLOWABLE. REF. S/N 307-0310 T.A. NO 7.							
CORRECTIVE ACTION-ECP 7502 REDEFINES BASIC REQUIREMENTS OF RELIEF VALVE. REF. PPR NR P-5011-3T AND PPR NO 654-2-022.							
PNEUMATIC-A/B TANK PRESS	69A2946 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	631101	60/C	YES NO	MADLEY 10328-9	892402
FAILURE MODE-OUT OF TOLERANCE. DURING PET POST VIBRATION PROOF CYCLE B THE SPECIMEN CRACKED AT 71.9 PSIG VS 71.7 PS SIG MAXIMUM ALLOWABLE UNDER FUEL FLOW CONDITIONS. REF S/N 307-0310 T.H. NO 6.							
CORRECTIVE ACTION-ECP 7502 REDEFINES BASIC REQUIREMENTS OF RELIEF VALVE. REF. PPR NR P-5011-3T AND PPR NO 654-2-022							
PNEUMATIC-A/B TANK PRESS	69A2946 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	631031	60/C	YES NO	MADLEY 10328-9	892397
FAILURE MODE-OUT OF TOLERANCE. DURING PET OPERATING VIBRATION TEST STATIC CRACKING PRESSURE RANGED FROM 69.1 TO 69. 3 PSIG, ALLOWABLE IS 69.3 TO 70.5 PSIG. RESET PRESSURES RANGE FROM 87.9 TO 89.2 PSIG, ALLOWABLE IS 69.3 PSIG MINIMUM . REF. S/N 307-0310 T.H. NO 6.							
CORRECTIVE ACTION-ECP 7502 REDEFINES BASIC REQUIREMENTS OF RELIEF VALVE. REF. PPR NR P-5011-3T AND PPR NO 654-2-022							
PNEUMATIC-A/B TANK PRESS	69A2029-1 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	631030	60/C	YES NO	B.M. MADLEY 10328-9	892437
FAILURE MODE-OUT OF TOLERANCE. DURING PET AXIS III, VIBRATION RETEST, AT ROOM AMBIENT TEMP., VARIOUS OUT-OF-TOLERAN CE CONDITIONS OCCURRED. TEN TRIAL CRACK AND REPEATS WERE ATTEMPTED. OUT-OF-TOLERANCES WERE CONSIDERED MINOR. PPR0309 . S/N 307-0309. T.H. NO.7.							
CORRECTIVE ACTION-ECP 7502 REVISED THE BOOK SPECIFICATION.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	69A1954.1 LOX TANK PRESS RELIEF VALVE	UTP-SLT 27-08103-9	631030	60/C	YES NO	B.H. MADLEY NO 10525-9
<p>FAILURE MODE-OUT OF TOLERANCE. DURING THE STATIC CRACK AND RESEAT PORTION OF THE PROOF CYCLE THE VALVE DID NOT RESEAT AFTER THE SECOND CRACK FUNCTION UNTIL IT WAS LIGHTLY TAPPED. DURING FULL FLOW RESPONSE THE VALVE FAILED TO RESEAT. THE CRACK PRESSURE WAS 35.6 PSIG WITH AN INLET SPIKE OF 30.1 PSIG. FULL FLOW TANK PRESSURE WAS 32.4 PSIG. REF. S/N 210-0501 T.M. NO. 9 AND FPM NR P-4002 ST.</p>						
<p>CORRECTIVE ACTION-TESTING DISCONTINUED AND MALFUNCTION INVESTIGATION CONDUCTED. REF. R17N-FPM NR P-4002 ST. AND FPM NR 654-2-022. VENDOR QUALITY CONTROL INSPECTION HAS BEEN TIGHTENED UP TO PREVENT TROUBLE RECURRENCE.</p>						
PNEUMATIC-A/B TANK PRESS	69A2028-1 FUEL TANK PRESSURE RELIEF VALVE	UTP-SLT 27-08104-9	631030	60/C	YES NO	B.H. MADLEY NO 10528-9
<p>FAILURE MODE-STRUCTURAL. CRACK AND RESEAT PRESSURE OUT-OF-TOLERANCE DURING POST SLT PROOF CYCLE ROOM AMBIENT TEMPERATURE. ALL OUT-OF-TOLERANCES WERE LESS THAN 0.4 PSIG AND CONSIDERED MINOR. SECOND STAGE BLEED-OFF SEAT WAS BADLY WORN CAUSING CHIPS TO BE PRESENT WHICH KEPT POPPET FROM RESEATING FULLY. FPM 4036.</p>						
<p>CORRECTIVE ACTION-STOP TEST. FPM 022, ECP 7582.</p>						
PNEUMATIC-A/B TANK PRESS	69A2143 BOILOFF VALVE-REGULATOR	UTP-PRT 89-80200-1	631029	60/C	YES NO	60/C
<p>FAILURE MODE-OUT OF TOLERANCE. DURING PRT CRYOGENIC GAS FLOW TEST WITH THE 2370 CUBIC FT. TANK FILLED TO 40 CUBIC FT. ULLAGE THE REGULATOR CAUSED THE UNIT TO CRACK AT 8.0 PSIG. REG. IS 3.0 PSIG MAX. REF. FPM NR P-4030ST. S/N 309-0002.</p>						
<p>CORRECTIVE ACTION-TEST CONTINUED. DESIGN GROUP IS TO CHANGE DRAWING 89-80200 TO CLARIFY CRACK AND RESEAT PRESSURE AT CRYOGENIC TEMPERATURES. REF. FPM FPM54-2-043.</p>						
PNEUMATIC-A/B TANK PRESS	69A1954.1 LOX TANK PRESS RELIEF VALVE	UTP-SLT 27-08103-9	631029	60/C	YES NO	B.H. MADLEY NO 10525-9
<p>FAILURE MODE-OUT OF TOLERANCE. DURING HIGH TEMPERATURE (240 DEGREES F CHAMBER TEMPERATURE, 480 DEGREES F INLET GAS TEMPERATURE) 2-AXIS VIBRATION, THE TEST SPECIMEN WAS OUT-OF-TOLERANCE ON ALL CRACKING AND RESEATING FUNCTIONS PERFORMED. THE VALVE DID NOT RESEAT AT THE END OF THE VIBRATION SHEEP UNTIL THE SPECIMEN WAS TAPPED. REF S/N 818-0501 T.M. NO. 9 AND FPM NR P-4002 ST.</p>						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-NONE.							991707
PNEUMATIC-A/B TANK PRESS	SLV-99-08-3138F MANUAL SHUTOFF VALVE-LOX, PIN	FAR 87-08108-1-B	631025	FACTORY	YES	PEACOCK NO 91380-1-L	996686
FAILURE MODE-FAIL TO OPERATE AT SPECIFIED TIME, LOCK PIN FAILED TO AUTOMATICALLY DROP IN THE LOCKING HOLE WHEN THE SPECIFIED TORQUE WAS APPLIED.							
CORRECTIVE ACTION-ENGINEERING OPERATION PROCEDURE 910-4C REVISION OF APRIL 2, 1984 SPECIFIED CORRECT USE OF TORQUE WRENCH. EOP ALSO REQUIRED, THAT LOCKING PIN AUTOMATICALLY FALL INTO LOCKING HOLE WHEN TORQUE IS VARIED WITHIN SPECIFICATION LIMITS. A VENDOR CHANGE PROPOSAL TO INCREASE PIN-HOLE SIZE WAS REJECTED DUE TO POSSIBILITY OF ALLOWING LEAKAGE. 60/C WILL NOT OBTAIN A TORQUE WRENCH ADAPTER FOR RECEIVING-INSPECTION BECAUSE 60/C ACCEPTANCE IS ACCOMPLISHED AT THE VENDOR FACILITY. REFERENCE RARS SLV-99-08-3656 AND-3771.							
PNEUMATIC-A/B TANK PRESS	69A2143 BOILOFF VALVE-SOLENOID	UTP-PRT 99-80200-1	631025	60/C	YES	60/C NO	992441
FAILURE MODE-OUT OF TOLERANCE. DURING PRT CRYOGENIC GAS FLOW TEST WITH THE 2370 CUBIC FT. TANK AND ULLAGES OF 40 TO 1000 CUBIC FT. THE SOLENOIDS A AND B EXCEEDED THE ALLOWABLE 1.5 AMP. MAX. REF. PRR MR P-4050 ST. 9/M 308-0002.							
CORRECTIVE ACTION-TEST CONTINUED. DESIGN GROUP IS TO CHANGE DRAWING 69-80200 TO MAKE CURRENT REQUIREMENTS COMPATIBLE WITH THE SOLENOID CONTROL DRAWING SPECIFICATION. REF. PRR FR854-2-045.							
PNEUMATIC-A/B TANK PRESS	69A2946 FUEL TANK PRESSURE RELIEF VALVE	UTP-PET 27-08104-9	631025	60/C	YES	MADLEY NO 10526-9	992440
FAILURE MODE-OUT OF TOLERANCE. DURING PET FULL FLOW RESPONSE TEST PROOF CYCLE B, THE SPECIMEN INITIAL SPIKE RANGED FROM 72.3 TO 72.9 PSIG VS 72.2 PSIG ALLOWABLE. REF. 9/M 307-0510 T.M. NO 4.							
CORRECTIVE ACTION-ECP 7582 REDEFINES BASIC REQUIREMENTS OF RELIEF VALVE. REF. PRR MRF-5011 ST AND PRR NO 634-2-022.							
PNEUMATIC-A/B TANK PRESS	69A2020-1 FUEL TANK PRESSURE RELIEF VALVE	UTP-PRT 87-08104-9	631025	60/C	YES	D.M. MADLEY NO 10428-9	
FAILURE MODE-OUT OF TOLERANCE. TEN OUT-OF-TOLERANCE CONDITIONS OCCURRED DURING PRT HIGH TEMPERATURE VIBRATION AXIS III. CRACKING AND RELIEF WAS BELOW REQUIREMENTS. RANGE VARIED FROM 87.3 TO 88.3 PSIG CRACKING AND 88.8 TO 88.7 HERTZ. PRR-4048, T.M. NO. 6, PRR-884-2-022 AND ECP 7882 9/M 307-0509.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-ECR 7302 REVISED BOOK SPECIFICATION PRR 854-2-022.							090330
PNEUMATIC-A/B TANK PRESS	LT-80-08-3150F BOILOFF VALVE, SEALANT	FAR 27-80750-831	2240 631021	WTR	YES NO		090330
FAILURE MODE-OUT OF TOLERANCE. DURING TANKING FOR ULLAGE PRESSURE VARIED FROM 0.2 TO 4.2 AND STOPPED DETANKING. ALL CHARGE IS 5.0 TO 4.7 PSIG. CAUSE IS ATTRIBUTED TO THE LOW SAFE LUBRICANT IN AREA OF ADJUSTER AND ITS GUIDE. AS VALVE COOLED THE LUBE BECAME PROGRESSIVELY HARDER CAUSING ADJUSTER TO BIND.							
CORRECTIVE ACTION-THREE SOLENOID SENSORS FROM STOCK WERE DISASSEMBLED. NO LOW SAFE LUBRICANT WAS FOUND. SENSORS 019 ASSEMBLED TO INSURE DISCREPANCY WAS NOT REPETITIVE.							090729
PNEUMATIC-A/B TANK PRESS	04983/L3-4MO-DE-224 BOILOFF VALVE	COMPOSITE-FRD/DPL 27-80750-831	2240 631020	WTR	YES NO		090729
FAILURE MODE-OUT OF TOLERANCE. BOILOFF VALVE FAILED TO RESEAT PROPERLY DURING LOW DRAIN SEQUENCE.							
SYSTEM EFFECT-OPERATION TOO LOW. LOW PRESSURE IN LOW TANK. PCU WENT INTO EMERGENCY MODE-BOILOFF VALVE REQUIRED MANUAL OPERATION.							
VEHICLE EFFECT-COMPOSITE ABORTED AND RE-CHARGED.							
CORRECTIVE ACTION-LOW BOILOFF VALVE WAS CHANGED.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3153F SOLENOID SENSOR VALVE	FAR 27-81448-029	631018	FACTORY	YES NO		091760
FAILURE MODE-EXTERNAL LEAK. THERE WAS EXCESSIVE LEAKAGE OUT OF SENSOR BELLOW VENT HOLE RESULTING FROM TRAPPED AIR BEING FORCED OUT AS BELLOW IS FLEXED. CAUSE LEAKAGE WAS CAUSED BY COLD FLOW OF TEFLON SEAL. A METAL PARTICLE WAS COL D WORKED ONTO THE SEAT DURING MACHINING.							
CORRECTIVE ACTION-FAILURE CONFIRMED. PER LETTER DATED 040225, 60/C O.C. CONSIDERS THE PRESENT MACHINING REQUIREMENT S TO BE ADEQUATE. PER LETTER AWH-300-PA-64-14 DATED 040318, DESIGN WILL NOT INVESTIGATE THE USE OF OTHER SEAL MATERIALS. REF. BAR-A-99-08-3500.							
PNEUMATIC-A/B TANK PRESS	99C-1903 PRESSURE TRANSDUCER	UTP-PRT 27-00108-1	631011	60/C	YES CRESCENT NO 89-9001		
FAILURE MODE-OUT OF TOLERANCE. DURING PRT LOW TEMPERATURE VIBRATION AT -189 DEGREES F, THE UNIT LEAKED INTERNALLY FROM THE HIGH PORT TO THE LOW PORT. DURING A PROBE CYCLE AT AMBIENT TEMPERATURES THE UNIT ALSO LEAKED. LEAKAGE BEGAN AT -187 DEGREES F. REF. 87H 909-1370 T.N. NO.2.							

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1968

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI QTH	VENDOR NAME VENDOR PART NO
						091093
	CORRECTIVE ACTION-DISCONTINUE TESTING AND CONDUCT FAILURE ANALYSIS. TESTING TO CONTINUE USING ANOTHER SPECIMEN. PRO CEDURES WILL BE MODIFIED TO INSPECT FOR TRANSDUCER CORROSION. REF. FPR NR P-4034-81, CARR NO. P 4034 SC-11-2,-3,-4 A NO FPR NO. PR 634-2-031.					
PNEUMATIC-A/B TANK PRESS	SP-90-08-3150F RESTRICTOR-LOX PRESSURE REGULATOR; SENSING	FAR 27-08187-3	2240 091006	2-3	NO NO	092124 10082
	FAILURE MODE-OUT OF TOLERANCE. MARGINAL DIFFERENTIAL PRESSURE BETWEEN LOX TANK AND REGULATOR SENSING. NO DISCREPANC IES FOUND DURING ANALYSIS. ORIFICE IS AT LOWER LIMIT OF ALLOWABLE FLOW. THIS CAUSED A SUMP-FILL.					
	CORRECTIVE ACTION-NOT CONFIRMED. CHANGE 8 TO 27-01134 OF OCT. 23, 1965 FOR WTR, AND CHANGE 9 TO 27-02310 OF OCT. 25, 1965 FOR ETR PERMITTED THE PCU TO BE SET 1 PSIG HIGHER, 28 1/4 PSIG IF RESTRICTOR IS AT THE LOWER PORTION OF BAND P LOW.					
PNEUMATIC-A/B TANK PRESS	69A2548 FUEL TANK PRESS RELIEF VALVE	UTP-PET 27-08104-8	091007	60/C	YES NO	092439 10528-9
	FAILURE MODE-OUT OF TOLERANCE. DURING PET FULL FLOW RESPONSE TEST PROOF CYCLE 8 THE INITIAL SPIKE RANGED FROM 72.3 1 0 72.4 PSIG VS 72.2 PSIG ALLOWABLE AND THE 200 MILLISECOND POINT WAS 71.8 PSIG VS 71.7 PSIG ALLOWABLE PRESSURE. FULL FLOW AND RESEAT REQUIREMENTS WERE ACCEPTABLE. REF. S/N 307-0310 T.N. NO2.					
	CORRECTIVE ACTION-ECP 7502 REDEFINES BASIC REQUIREMENTS OF RELIEF VALVE. REF. FPR NOFR 634-2-022 AND CARR P-5001-SC -3.					
PNEUMATIC-A/B TANK PRESS	LV-90-08-3154F SEAL-HELIUM CHANGE-OVER VALVE	FAR 94-18013-29	2240 031004	WTR	YES NO	092480 TORUSAL
	FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE PAST SEAL. ANALYSIS DID NOT REVEAL ANY SEAL DEFICIENCIES. MATING COMPONENTS WERE NOT SENT IN FOR ANALYSIS.					
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED. FIELD PERSONNEL WERE NOTIFIED OF FAR RESULTS ON NOV 19, 1964.					
PNEUMATIC-A/B TANK PRESS	FPR NR P-5001-WT PRESSURE TRANSDUCER	UTP-PET 27-08109-1	031002	63/C	YES NO	092500 CRESCENT 89-5001
	FAILURE MODE-OUT OF TOLERANCE. FOLLOWING IMMERSION TEST THE PET LOT TEST UNIT FAILED TO MEET SPECIFICATION OUTPUT V OLTAGE REQUIREMENTS BY 0.04 VOLTS. NOMINAL OUTPUT IS 5.50 PLUS OR MINUS 0.17V. REF. FPR NR P-5001-WT. ON 8/4 300-9					

GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTN	VENDOR NAME VENDOR PART NO	
424.							092303
	CORRECTIVE ACTION-VENDOR WAS CONTACTED TO UPGRADE THE POTTING MATERIAL AND PROCEDURES. THE SPECIFICATION WAS CHANGED TO ELIMINATE THE IMMERSION TEST, DELETE THE HERMETIC SEAL REQUIREMENT, DELETE THE ALTITUDE REQUIREMENT, AND CHANGE CLEANING FROM 0-75003 TO 0-75003. REF. PFR NO. FR 094-2-023.						092430
PNEUMATIC-A/B TANK PRESS	0942948 FUEL TANK PRESS RELIEF VALVE	UTP-PRT 27-06104-9	091001	60/C	YES	HADLEY NO 10328-9	092430
	FAILURE MODE-OUT OF TOLERANCE. DURING PRT FULL FLOW RESPONSE TEST PROOF CYCLE B THE INITIAL SPIKE AND THE 200 MILLI SECOND POINT WERE ABOVE ALLOWABLE PRESSURE. INITIAL SPIKE RANGED FROM 72.4 TO 72.6 PSIG VS 72.2 PSIG ALLOWABLE AND 200 MILLI SECOND POINT RANGED FROM 71.8 TO 72.1 PSIG VS 71.7 PSIG ALLOWABLE. FULL FLOW AND REPEAT REQUIREMENTS WERE ACCEPTABLE. REF. S/N 307-0310 T.M. NO 1.						092430
	CORRECTIVE ACTION-ECP 7502 REDEFINED BASIC REQUIREMENTS OF VALVE. RETEST AFTER SPEC CHANGE WAS ACCOMPLISHED. REF. 7 FR NO FR 054-2-022 AND CARR P-5041-9C-1.						092430
PNEUMATIC-A/B TANK PRESS	0941834.1 LOX TANK PRESS RELIEF VALVE	UTP-PRT 27-06103-9	030828	60/C	YES	S.M. HADLEY NO 10323-9	092430
	FAILURE MODE-OUT OF TOLERANCE. DURING FULL FLOW RESPONSE PORTION OF TEST AN INITIAL SPIKE OF 39.5 PSIG WITH A 200 M ILLI SECOND POINT OF 35.1 PSIG WAS OBTAINED. REF. S/N 210-0301 T.M. NO. 4.						092430
	CORRECTIVE ACTION-ECP 7502 CHANGED THE BOOK SPECIFICATION. REF. RTHN NO. SLV-29 AND PFR FR054-2-018.						092430
PNEUMATIC-A/B TANK PRESS	0942028-1 FUEL TANK PRESSURE RELIEF VALVE	UTP-PRT 27-06104-9	030828	60/C	YES	HADLEY NO 10328-9	092430
	FAILURE MODE-OUT OF TOLERANCE. SIX OUT-OF-TOLERANCE CONDITIONS OCCURRED DURING PRT AMBIENT ROOM TEMPERATURE VIBRATION AXIS 1 WHEN DOWNSHIFT OF RANGE OCCURRED. RANGE VARIED FROM 66.3 TO 70.7 PSIG CRACKING AND 66.0 TO 66.3 PSIG REPEAT. PFR 4031. T.M. NO. 5; S/N 307-0309.						092430
	CORRECTIVE ACTION-ECP 7502 REVISED BOOK SPECIFICATION. PFR 054-2-022 SLV.						092430

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GENERAL INVESTIGATIVE
DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

[illegible]

15 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	SP-9D-08-3147F STAGING DISCONNECT, SUSTAINER, LOX 27-08124-5 AND FUEL PRESSURE	FAR	212D 630823	2-3	YES	B.M. MADLEY NO 10717-11	0918231
FAILURE MODE-CONTAMINATION CAUSED EXTERNAL LEAK. LEAKED BETWEEN THE SUSTAINER AND BOOSTER VALVES. POSSIBLY CAUSED BY FROM A SMALL CONTAMINATE PARTICLE. ANALYSIS DID NOT REVEAL ANY DISCREPANCIES. PART WAS REPLACED WITH NO LEAKAGE.							
CORRECTIVE ACTION-NOT CONFIRMED. A CONTAMINATION CHECK OF THE MISSILE CANNOT BE MADE, SINCE VEHICLE WAS LAUNCHED. A AFB PERSONNEL WERE NOTIFIED OF ANALYSIS RESULTS VIA TELEPHONE ON SEPT. 25, 1963.							
PNEUMATIC-A/B TANK PRESS	SP-9D-08-3149 RISE-OFF DISCONNECT	FAR 27-08120-7	197D 630823	33	YES	B.M. MADLEY NO 10929-3	091826
FAILURE MODE-EXTERNAL LEAKAGE. SUSPECTED LEAK THROUGH THE BODY OF THE FORWARD SHOULDER AT 3000 PSIG PRESSURE. NO TH ROUGH LEAK PATH FOUND IN ANALYSIS. LEAK PROBABLY CAUSED BY INCOMPLETE FLARE SEALING. DISCONNECT WAS REPLACED ON THE MISSILE. NO LEAKAGE WAS THEN NOTED.							
CORRECTIVE ACTION-NOT CONFIRMED. TWX SANCAP 10-321 DATED OCT. 11, 1963 WAS SENT TO SITE PERSONNEL DESCRIBING ANALYS IS RESULTS. A REPLY BY TELEPHONE ACKNOWLEDGED RECEIPT OF TWX.							
PNEUMATIC-A/B TANK PRESS	69A2020-1 FUEL TANK PRESS RELIEF VALVE	UTP-PRT 27-09104-9	630822	60/C	YES	B. M. MADLEY NO 10928-9	091730
FAILURE MODE-OUT OF TOLERANCE. DURING FULL FLOW RESPONSE OF 1AT, (PRT) RESEAT WAS 62.0 PSIG TO 63.0 PSIG INSTEAD OF 68.5 PSIG. TEST CONDITIONS WERE NO VIBRATION, ROOM AMBIENT TEMPERATURE REF-B/M 307-0506 TH NO. 1.							
CORRECTIVE ACTION-NONE. FRR 834-2-013 BLV.							
PNEUMATIC-A/B TANK PRESS	69A1934-1 LOX TANK PRESS RELIEF VALVE	UTP-PRT 27-00103-9	630822	60/C	YES	B.M. MADLEY NO 10923-9	091711
FAILURE MODE-OUT OF TOLERANCE. THE CRACKING PRESSURE WAS OUT OF TOLERANCE AT 35.1, 34.0, AND 38.0 PSIG. REF. B/M 81 0-0301, T.M. NO. 1.							
CORRECTIVE ACTION-ECP 7582 CHANGED THE BOOK SPECIFICATION. REF R17M NO. BLV-81.							

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	27C2978 PRESSURE TRANSDUCER	UTP-PET 27-08108-1	630822	60/C	YES NO	CRESSENT MO 89-5001
FAILURE MODE-OUT OF SPECIFICATION. DIMENSION F OF FIGURE 1 OF REIFICATION DRAWING WAS MEASURED TO BE .190 INCHES. ALLOWABLE DIMENSION F IS .115 TO .135 INCHES.						
CORRECTIVE ACTION-THE SPECIFICATION CONTROL DRAWING WILL BE REVISED TO AGREE WITH PREVIOUSLY ACCEPTED VENDOR DRAWING 63.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3137F BOILOFF VALVE	PAR 27-08596-7	112F 630725	FACTORY	YES NO	CALMEC MO 27-08596-7
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE AT 4 PSIG. LEAK RATE IN THE LABORATORY WAS 150 SCIM AT 4 PSIG AT AMBIENT AND WAS 750 SCIM AT 44 PSIG AT CRYOGENIC TEMPERATURE. ALLOWABLE RATE IS 1000 SCIM AT 2 TO 10 PSIG.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. APPROPRIATE PERSONNEL WERE NOTIFIED OF THE ANALYSIS AND TOLD THAT IF ANY 2 7-08596 VALVE IS SUSPECTED OF EXCESSIVE LEAKAGE, THAT THE LOX TANK SHOULD BE MONITORED TO DETERMINE IF LEAK RATE IS ABOVE ALLOWABLE BEFORE REJECTING VALVE. REF PAR A-99-08-3452.						
PNEUMATIC-A/B TANK PRESS	SP-99-08-3144F STAGING DISCONNECT-SUBTAINER, LOX PRESSURE LINE SEAL	PAR 27-08120-3	2270 630734	FACTORY	YES NO	B.M. MADLEY MO 10714-19
FAILURE MODE-CONTAMINATION CAUSED EXTERNAL LEAK. LEAKING AT 26 PSI WITH BOOSTER NOT ATTACHED. CAUSE WAS IDENTIFIED GROOVES IN TEFLON POPPET SEAL. CONTAMINATION MAY HAVE CAUSED THE GROOVES.						
CORRECTIVE ACTION-INSPECTION WAS NOTIFIED OF FAILURE CAUSE PER MEMO REL-63-81-214 DATED 631029.						
PNEUMATIC-A/B TANK PRESS	60/A83-0334/L1-401-00-75 LOX TANK REGULATOR	FLIGHT	750 630716	1-2 2.	YES NO	F AND 6
FAILURE MODE-ERRATIC OPERATION. LOX TANK VULAGE PRESSURE DECREASED OUT OF TOLERANCE TO 22.1 PSIG. THE PRESSURE HAD RECOVERED TO NORMAL PRESSURE BY 4 SECONDS OF FLIGHT.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						

GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	A-98-08-3142F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	1307 830717	11	YES NO	HYDRA ELECTRIC NO 32018-1
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CONTACTS WOULD NOT OPEN AT THE REQUIRED PRESSURE DIFFERENTIAL. CAUSE WAS IMPROPER ADJUSTMENT OF THE SWITCH.						
CORRECTIVE ACTION-RAR A-98-08-3054 DOCUMENTS THAT APPROPRIATE PERSONNEL WERE NOTIFIED OF THE CONSEQUENCES OF MAKING IMPROPER SWITCH ADJUSTMENTS. INSPECTION PERSONNEL WERE REQUESTED TO TRY AND PREVENT REPETITION OF THIS PROBLEM.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3140F BOILOFF VALVE, SEAL	FAR 27-08398-1	72C 830717	FACTORY	YES NO	AIRSEARCH NO 122598-2-1
FAILURE MODE-EXTERNAL LEAKAGE. TWO REJECTIONS OF EXCESSIVE LEAKAGE AT LOW PRESSURE. CAUSE, BUTTERFLY OVERSHOOT COMBINATION, AND AN INADEQUATE REL-F SEAL MATERIAL. VENDOR RETURNED ALL BUT SEVEN VALVES.						
CORRECTIVE ACTION-PER RAP A-99-08-3843 SURVEY 75-83 OF 831011 WAS INITIATED. 3 VALVES WERE LOCATED AND REMOVED DUE TO LIPSEAL PROBLEM. IN JUNE 1965 VENDOR LEAK CHECKED REMAINING 4 UNITS. ONE REQUIRED ADJUSTMENT. 3 WERE SATISFACTOR Y. RAR A-99-08-3844 INFORMED THE AIRFORCE OF RESULTS OF FAR ANALYSIS AND LISTED THE SERIAL NUMBERS OF THE 7 VALVES.						
PNEUMATIC-A/B TANK PRESS	89C-1993 PRESSURE TRANSDUCER	UTP-PRT 27-08109-1	830712	50/C	YES NO	CRESCENT NO 89-3001
FAILURE MODE-OUT OF TOLERANCE. DIMENSION F OF FIG 1 (1.183) SHOULD BE (.125) PER SPEC. CONTROL DWG.						
CORRECTIVE ACTION-SPEC CONTROL DWG IS IN ERROR AND WILL BE CORRECTED.						
PNEUMATIC-A/B TANK PRESS	8P-90-08-3138F REGULATOR, SENSING RESTRICTOR	FAR 27-08167-1	2100 830709	2-3	YES NO	DEL NO 10046
FAILURE MODE-OUT OF TOLERANCE. THE LOW TANK PRESSURE REGULATOR SENSING LINE RESTRICTOR PROVIDED INADEQUATE RESTRICTI ON OF HELIUM FLOW. FLOWED AT 3.85 SCFH. ALLOWABLE RATE IS 2.65-2.80 SCFH AT 3000 PSIG.						
CORRECTIVE ACTION-CONFIRMED EXCESS FLOW. ECF 1896-1 APPROVED MARCH 8, 1966 AUTHORIZED REPLACEMENT BY AN ORIFICE TYP E RESTRICTOR.						

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GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	NZ-90-08-3143F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	2000 030709	A-1	YES NO	HYDRA-ELECTRIC 32010-1	009946
FAILURE MODE-CONTAMINATION. SWITCH OPENED AT A DECREASING PRESSURE DIFFERENCE LESS THAN THE REQUIRED 0.9 PLUS OR MINUS 0.3 PSID. CAUSE ATTRIBUTED TO CORROSION OF INTERNAL COMPONENTS INTERFERING WITH PRESSURE PLATE MOVEMENT.							
CORRECTIVE ACTION-COMFIRMED. IN REPLY TO PAR NZ-90-08-3846 ECP 1820 CHANGED FROM -1 TO A -9 SWITCH FOR WEAPONS ONLY. THIS INCORPORATES CHANGES TO ELIMINATE CORROSION.							
PNEUMATIC-A/B TANK PRESS	SP-90-08-3136F RESTRICTOR-LOW PRESSURE REGULATOR	FAR 27-08187-1	2100 030705	WTR	YES NO	DEL 10046	000435
FAILURE MODE-OUT OF TOLERANCE. INADEQUATE RESTRICTION OF HELIUM FLOW. FLOWED AT 3.40 SCFM. ALLOWABLE RATE IS 2.85-2.90 SCFM AT 3000 PSIG.							
CORRECTIVE ACTION- ENGINEERING CHANGE PROPOSAL 1598-1 APPROVED MARCH 8, 1983 AUTHORIZED REPLACEMENT BY AN ORIFICE TYPE RESTRICTOR.							
PNEUMATIC-A/B TANK PRESS	SP-90-08-3130F FUEL TANK PRESSURE RELIEF VALVE-CO	FAR 27-08104-3	750 030702	1-R	YES NO	B.M. HADLEY 10528-5	058435
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE WAS AT PRIMARY CONTROLLER. TESTING INDICATED THAT LEAK RATE WAS WITHIN ALLOWABLE LIMITS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED-LEAKAGE WAS WITHIN SPECIFICATIONS. THE SEN VAN 8-76 OF AUG 9, 1983 INFORMED WTR PERSONNEL OF RESULTS OF THE ANALYSIS.							
PNEUMATIC-A/B TANK PRESS	SP-90-08-3141F BOILOFF VALVE SOLENOID	FAR 27-08340-001	030828	FACTORY	YES NO	INC MAGNETICS 1750	001740
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. MICRO SWITCH FAILED TO MAINTAIN CONTACT WHEN THE MAIN SOLENOID WAS DEENERGIZED. COULD HAVE BEEN CAUSED BY THE PLUNGER BEING TOO SHORT TO MAINTAIN CONTACT, OR BY LATCHING SOLENOID NOT LATCHING IN PROPER POSITION. ONLY THIS SOLENOID WAS SENT IN FOR ANALYSIS. OTHER PORTIONS OF 27-81448-829 WERE NOT.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. APPROPRIATE PERSONNEL WERE INFORMED OF ANALYSIS RESULTS AND WERE REQUESTED TO SEND ALL PARTS IN FOR ANALYSIS THAT COULD CONTRIBUTE TO THE FAILURE.							

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	SP-90-08-313SF SOLENOID SENSOR VALVE	FAR 27-81448-828	1970 830324	WTR	YES NO		896416
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. DID NOT CLOSE. CAUSE UNKNOWN. A REPLACEMENT VALVE WAS INSTALLED ON THE MISSILE AND WORKED SUCCESSFULLY.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. SITE PERSONNEL NOTIFIED VIA TELEPHONE ON MAY 29, 1963 OF RESULTS OF THIS AVALYSIS. VEHICLE 1970 IS NOW 3500.							
PNEUMATIC-A/B TANK PRESS	A-99-14-191-F SWITCH-PRESSURE	FAR 87-44906-338	830321	FACTORY	YES BOURN 71732-0-9-8-00 0		894308
FAILURE MODE-CONTAMINATION RESULTING FROM RESIDUE CAUSED BY CITRIC ACID BATH DURING MANUFACTURE AND RESULTING IN EXCESSIVE CONTACT RESISTANCE.							
CORRECTIVE ACTION-VENDOR DELETED CITRIC ACID BATH FROM THE CLEANING PROCESS.							
PNEUMATIC-A/B TANK PRESS	SP-90-08-3132F MANUAL SHUTOFF VALVE	FAR 27-09108-1	1495 830319	WTR	YES PEACOCK NO 51383-1-6		897717
FAILURE MODE-INTERNAL LEAKAGE. SEAL LEAKAGE OF 30 SCIM AT 3.5 PSIG OCCURRED AT THE TOP SHAFT AREA. CAUSE IS ATTRIBUTED TO EXCESS TORQUE OF 216 INCH-POUNDS TO CLOSE AND LOCK SHUT. REQUIRED FORCE SHOULD BE 25 TO 90 INCH-POUNDS. VALVE NOT CORRECTLY ADJUSTED AT ASSEMBLY.							
CORRECTIVE ACTION-CONFIRMED. YEAR 5008-83 REQUESTED VENDOR TO REVIEW ASSEMBLY AND TEST TECHNIQUES TO ASSURE THAT VALVES DELIVERED TO GO/A MEET ALL SPECIFIED REQUIREMENTS. THIS WAS DONE PER A VENDOR REPORT DATED SEPT 30, 1963. REF A AR SP-90-08-3647.							
PNEUMATIC-A/B TANK PRESS	SP-90-08-313SF MANUAL SHUTOFF VALVE	FAR 27-08108-3	3F 830506	WTR	YES PEACOCK NO 51383-1-6		897716
FAILURE MODE-INTERNAL LEAKAGE, GAS LEAKED PAST BUTTERFLY. THE BUTTERFLY TO SHAFT RELATION WAS OUT TWO TEETH SEPARATE ON LEAVING BUTTERFLY SLIGHTLY OPEN WHEN SHAFT WAS CLOSED. READJUSTMENT IN THE LAB STOPPED LEAKAGE.							
CORRECTIVE ACTION-FAILURE CONFIRMED. GO/A REVISED TEST PROCEDURE PER 303 TO INCORPORATE TORQUE REQUIREMENTS TO LATE BY APPROVED VENDOR DRAWING, 31109, REVISION M. ACTION DOCUMENTED BY CORRESPONDENCE DATED SEPT 30, 1963 WHICH WAS IN ANSWER TO BAR SP-90-08-3645.							

GENERAL DYNAMICS
CONVAIR DIVISION

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
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093230

PNEUMATIC-A/B
TANK PRESS: SP-90-08-3120F
TUBING ASSEMBLY-MELIUM PRESSURIZATION: 27-90003-193
ON, 8-NUT YES 60/°C
NO

FAILURE MODE-EXTERNAL LEAKAGE. 8-NUTS LEAKED DURING A LEAK CHECK. POSSIBLE STRESS RELAXATION. NUTS WERE RETORQUED A
NO LEAK STOPPED. THE DATED MAY 16, 1963 FROM VAPB CONFIRMED THAT TUBE ASSEMBLY WOULD NOT BE FORWARDED FOR ANALYSIS.

CORRECTIVE ACTION-PERMISSION TO RETAIN THE HARDWARE ON THE VEHICLE WAS GRANTED VAPB PERSONNEL VIA TELEPHONE. M.P.B.
24.19443 AMENDED ON DATE 8-24-63 FOR PROPER CONTROL OF FLARE TUBE ASSEMBLIES. APPROPRIATE PERSONNEL WERE NOTIFIED OF
THE REJECTION AND REQUESTED TO PAY PARTICULAR ATTENTION TO 8-NUT TORQUING. 60/°C IS CONDUCTING TESTS ON STRESS RELAXA
TION AND HAVE CHANGED VENDOR AND MATERIAL.

093380

PNEUMATIC-A/B
TANK PRESS: SP-90-08-3130F
PRESSURE REGULATOR-LOX TANK FAR 27-08245-9 YES 8-M. MADLEY
NO 10704-11

FAILURE MODE-ERRATIC OPERATION. UNIT SUBJECTED TO SEVERE OPERATING CONDITIONS- FULL MELIUM AT LOW TEMPERATURE-
AS A RESULT OF MELIUM CHANGE OVER VALVE FAILURE. ANALYSIS REVEALED THAT THE BOTTOM OF THE VALVE FILL WAS 0.3 PSI
HIGHER THAN MAXIMUM ALLOWED.

CORRECTIVE ACTION-NONE. IT IS STANDARD PRACTICE TO REJECT REGULATOR AND RELIEF VALVE AFTER EXPERIENCING EXTREME OPE
RATING CONDITIONS.

093390

PNEUMATIC-A/B
TANK PRESS: SP-90-08-3134
REGULATOR FAR 27-09103-3 YES 8-M. MADLEY
NO 10325-5

FAILURE MODE-OUT OF SPECIFICATION. RELIEF VALVE AND LOX REGULATOR WERE REJECTED BECAUSE THEY HAD BEEN SUBJECTED TO
FULL LOX FLOW AT LOW TEMPERATURE AFTER MELIUM CHANGE OVER VALVE DID NOT CLOSE AT COMMIT STOP. TESTING INDICATED THAT
CRACK AND RESEAT PRESSURES HAD SHIFTED UPWARD ROUGHLY 0.7 PSI SINCE THE DAY OF MAY 28, 1961. SMALL CRACKS WERE FOUND
IN THE POPPET DIAPHRAGM CAUSED BY THERMAL SHOCK AND FLEXURE. THESE CRACKS COULD INCREASE CRACK AND RESEAT PRESSURE.

CORRECTIVE ACTION-UNKNOWN.

PNEUMATIC-A/B
TANK PRESS: A-90-08-3123P
SHUTOFF VALVE FAR 27-08298-1 YES 79E
NO 128298-2-1

FAILURE MODE-EXTERNAL LEAKAGE. LEAKED IN EXCESS OF THE PERMITTED 1000 GCM MAXIMUM AT PRESSURES BETWEEN 2 AND 8 PSI
G. CAUSE WAS IMPROPER AXIAL ADJUSTMENT OF BUTTERFLY ON THE SHUT OFF AND BY IMPROPER ANGULAR ADJUSTMENT OF THE BUTTERFLY
CLOSING POSITION. A RUBBER PARTICLE WAS FOUND BETWEEN VALVE SEALING SURFACES BUT IT WAS NOT CONNECTED WITH THIS REJ
ECTION.

GENERAL DIRECTION
COM AIR DIVISION

15 JUN 1966

DIFF CULTIES REVIEW-PIEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST / REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-PER FAR 1-99-08-3479 RECEIVED 630703. CONTAMINATION TESTS AFTER CLEANING AND PRIOR TO INSTALLATION OF VALVE PROVED LOX TANK TO BE CLEAN. VENDOR REVISED HIS ASSEMBLY METHOD ON 631101 TO CLEARLY DEFINE BUTTERFLY ADJUSTMENT PROCEDURE. SUBJECT VALVE SHIPPED ON 621029. REFERENCE WCAR 4289-68. SIX VALVES WITH THIS DISCREPANCY REMAIN TO BE REMOVED. SEE SURVEY PER FAR-A-99-08-3140.						
PNEUMATIC-A/B TANK PRESS	SP-99-08-3137F DUCT ASSEMBLY-FUEL TANK RELIEF VAL 27-08200-1 VE/FITTING	FAR 630415	1350	FACTORY	YES	ELLIOT ENGINE NO RING EE1829-1
FAILURE MODE-STRUCTURAL. RING NOT PROX TO NEXT ASSEMBLY DUCT 27-08207-603. CAUSE ATTRIBUTE TO INADEQUATE LUBRICATION OF THREADS, ROUGH THREADS FROM MACHINING AND TO DESIGN-LIGHT WEIGHT MATERIAL, LARGE DIAMETER AND FINE THREADS.						
CORRECTIVE ACTION-MANUFACTURING PROCESS SPECIFICATION 24.05 WAS REVISED FOR COMPLETE THREAD LUBRICATION USING COM C ORNING FS-1281 FLUOROSILICONE GREASE. INSTALLATION IMPROVEMENT WILL BE INVESTIGATED. PRODUCTION DRAWINGS WILL NOT BE CHANGED AT THIS TIME. REFERENCE FAR SP-99-08-3631 AND INTER COMPANY LETTER OF APRIL 26, 1963.						
PNEUMATIC-A/B TANK PRESS	SP-99-08-3122F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	1190	1-2	NO	B.M. MADLEY NO 10528-1
FAILURE MODE-EXTERNAL LEAK. MEDIUM LEAKAGE AT BASE OF VALVE SENSING PORT. TESTING CONCLUDED THAT LEAKAGE WAS WITHIN ALLOWABLE TOLERANCE.						
CORRECTIVE ACTION-FAILURE, NOT CONFIRMED. THE SANVAN 9-232 SENT TO V.A.P. BASE ON MAY 22 1963 INFORMING PERSONNEL OF RESULTS OF THIS ANALYSIS.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3113C CHECK VALVE-TANK PRESSURE LINE	FAR 27-08114-1	822	FACTORY	YES	B.M. MADLEY NO 10588-1
FAILURE MODE-EXTERNAL LEAKAGE AT THE OUTLET FITTING. CAUSE NOT KNOWN. NO ANALYSIS PERFORMED.						
CORRECTIVE ACTION-NONE. GO/C HAS NO FUNDS FOR ACTION ON MISSILES RETURNED FOR UP DATE OR REFURBISHMENT. CORRECTIVE ACTION BY DEPT 148 ON THESE MISSILES CEASED APRIL 16 1963.						
PNEUMATIC-A/B TANK PRESS	SP-99-08-3119F RESTRICTOR LOX PRESSURE REGULATOR 27-08167-1 SENSING	FAR 27-08167-1	1900	2-3	YES	DEL NO 10048
FAILURE MODE-OUT OF TOLERANCE. FLOW THROUGH LOX PRESSURE REGULATOR SENSING LINE RESTRICTOR HAD EXCESSIVE RESTRICTION OF MEDIUM FLOW AND DID NOT FLOW THE REQUIRED 8.65 TO 8.90 SCFH. TESTING RESULTED IN THE OPPOSITE EXCESSIVE FLOW OF						

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CONVAIR DIVISION

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PR1 OTH	VENDOR NAME VENDOR PART NO	
	P 3.1 SCFN. REASON FOR OUT OF TOLERANCE FLOW WAS INCORRECT DENSITY OF THE SINTERED MATERIAL.						996134
	CORRECTIVE ACTION-RESTRICTION. NOT CONFIRMED. ECP 1598-1. APPROVED MARCH 8, 1963 AUTHORIZED REPLACEMENT BY AN ORIFICE TYPE RESTRICTION.						
PNEUMATIC-A/B TANK PRESS	SP-99-08-3111F DUCT ASSEMBLY-FUEL TANK RELIEF VAL VE, FITTING	FAR 27-08000-1	1330 630323	FACTORY	YES NO	ELLIOT ENGR EE1229-1	996437
	FAILURE MODE-STRUCTURAL. R1'S NUT PROSE ON 27-80207-803 DUCT. REMOVAL OF RING NUT RESULTED IN GALLED AND DAMAGED TH READS. FAILURE WAS ATTRIBUTED TO INADEQUATE LUBRICATION OF THREADS, ROUGH THREADS FROM MACHINING, OR POSSIBLE RING NUT DISTORTION BY INCORRECT USE OF INSTALLATION TOOL.						
	CORRECTIVE ACTION-MANUFACTURING PROCESS SPECIFICATION 24.05 WAS REVISED CALLING FOR COMPLETE THREAD LUBRICATION USING DOW CORNING FS-1281 FLUOROSILICONE GREASE. INSTALLATION IMPROVEMENT WILL BE INVESTIGATED. PRODUCTION DRAWINGS WILL NOT BE CHANGED AT THIS TIME. REF RAR-SP-99-08-3431 AND AN INTERCOMPANY LETTER OF APRIL 26, 1963.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3113F DIFFERENTIAL PRESSURE SWITCH	FAR 27-06130-1	1430 630322	FACTORY	YES NO	HYDRA ELECTRIC MO 32016-1	994566
	FAILURE MODE-CONTAMINATION. A READING DURING A TEST OF INCREASING LOW SIDE PRESSURE WAS 0.5 PSI DIFFERENTIAL. ALLOWED RANGE IS 0.8 PLUS OR MINUS 0.3 PSI DIFFERENTIAL. CAUSE ATTRIBUTED TO CORROSION OF INTERNAL COMPONENTS AND GALVANIC ACTION.						
	CORRECTIVE ACTION-RAR AG-88-08-3630 DATED 630409 REQUESTED SWITCH BE REPLACED BY A SIMILAR ONE HAVING HARD ANODIZED INTERNAL COMPONENTS.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3107F	FAR 27-06102-23	630313	EIR	YES NO	FLUIDGENICS PG37-1	996136
	FAILURE MODE-OUT OF SPECIFICATION. FUEL TANK PRESSURE INCREASED TO 83 PSIG WHEN TRANSFER TO INTERNAL PRESSURE WAS ACCOMPLISHED, DURING COUNT DOWN. CAUSE A BROKEN STOP VALVE SHAFT.						
	CORRECTIVE ACTION-CORFIRMED. CORRECTIVE ACTION WAS HANDLED BY THE AIRFORCE. COPIES OF FAR AND PHOTOS WERE SENT TO VAF BANG. RMRU 8-29-10-981 DATED OCT. 9, 1962 REQUESTED A FIELD SURVEY TO LOCATE REGULATORS REQUIRING CHANGING. FURTHER ANALYSIS AND TESTING WAS RECOMMENDED TO TO DUPLICATE CONDITIONS REQUIRED TO BREAK THE POPPET SHAFT.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VEHICLE NAME VEHICLE PART NO
PNEUMATIC-A/B TANK PRESS	BP-A9-08-3106F PLUG-HELIUM BOTTLE	FAR 27-80209-9	2120 830312	FACTORY	YES NO	493281
FAILURE MODE-EXTERNAL LEAKAGE. LEAKED THRU HOLE IN THE CENTER. CAUSE WAS INCLUSION OR SLAG DEPOSITS INHERENT IN THE PLUG MATERIAL-303 STAINLESS STEEL.						
CORRECTIVE ACTION-PER FAR BP-A9-08-3834 REQUESTED THAT THE CALLOUT FOR 303 S.S. BE REMOVED FROM THE DRAWING. ACTION WAS NOT TAKEN BECAUSE DESIGN DID NOT CONSIDER THE PROBLEM HAD SUFFICIENT MAGNITUDE.						
PNEUMATIC-A/B TANK PRESS	LV-PO-08-3170F FUEL TANK PRESSURE DUCT ASSEMBLY	FAR 27-80807-803	3510 830311	WTR	YES AIRITE NO	893281
FAILURE MODE-STRUCTURAL. AUDIBLE LEAKAGE OF 310 CC PER MINUTE WAS NOTED AROUND THE 27-80331-1 PORT DUE TO TWO DUCT CRACKS ADJACENT TO BOSS FILLET WELD. THIS WAS CAUSED BY AN EXCESSIVE BENDING FORCE ON THE BOSS.						
CORRECTIVE ACTION-PER FAR LV-A9-08-3780 PERSONNEL INSTALLING OR HANDLING THIS DUCT WERE CAUTIONED NOT TO APPLY EXCESSIVE LOADING ON THE BOSS. COPIES OF FAR WERE SENT TO THE FIELD.						
PNEUMATIC-A/B TANK PRESS	NE-A9-02-037F STAGING DISCONNECT	FAR 27-73519	2080 830301	FACTORY	YES NO	899314
FAILURE MODE-OUT OF TOLERANCE-THE IN-FLIGHT HELIUM PRESSURE DISCONNECT DID NOT MATE PER E.O.P. 324-1-2 (PS-24) DUE TO O IMPROPER FABRICATION AND MACHINING OF THE 27-73511-9 BUSHING. SHALLOW SHOULDER DEPTH PREVENTED THE LOCKING BALLS FROM RIDING UP INTO THE BUSHING AT 45 DEGREE SHOULDER.						
CORRECTIVE ACTION-CONFIRMED. CORRECTIVE ACTION HISTORY 13204 DOCUMENTS FOLLOWING ACTION. (1.) E.O.P. 343-1-2 WAS REVISED BY TCA 12. (2.) E.C.N. 8 ON 27-73519 AND E.C.N. 9 ON 27-20428 WERE RELEASED. (3.) A T.C.N. 8 AGAINST T.O. 21-8 WMSD (11)-CL-2-14 WAS ISSUED TO BBAWA. (4.) ALL STOCKS AND SPARES WERE CHECKED FOR DRAWING COMPLIANCE ON 27-88138-1, 27-20428, 27-20429 AND 27-73511-7 AND -9. (5.) NEXT ASSEMBLIES WERE CHECKED FOR INSTALLATION DIMENSION. (6.) VCAR 3 082-05 SENT TO VENDOR O AND M MACHINE CO. INFORMING THEM OF PROBLEM. (7.) TEST CONDUCTORS ON D SERIES AT ETR AND WTR WERE INFORMED OF THE MODE AND CAUSE. (8.) QUALITY CONTROL SURVEY INSTRUCTIONS 11-83 WERE INITIATED.						
PNEUMATIC-A/B TANK PRESS	AF04-894/A1 HELIUM FLEX LINE	COUNTDOWN	1820 830819	A-1	YES NO	5
FAILURE MODE-LEAKING EXTERNAL. HELIUM FLEX LINE.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. HELIUM LOAD STOPPED PREMATURELY DUE TO LEAK IN FLEX LINE.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OIM	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-LEAK FIXED.						
PNEUMATIC-A/B TANK PRESS	SP-90-08-3112F RESTRICTOR-LOW PRESSURE REGULATOR SENSING	FAR 27-08107-1	1900 030213	WTR	YES 60/C NO DEL	10046
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE EXCESSIVE RESTRICTION OF HELIUM FLOW. DID NOT FLOW THE REQUIRED 2.05 TO 2.90 S.C.F.M. CAUSE, INCORRECT DENSITY OF SINTERED MATERIAL.						
CORRECTIVE ACTION-ECP 1596-1. APPROVED MARCH 8, 1963, AUTHORIZED REPLACEMENT BY AN ORIFICE TYPE RESTRICTOR.						
PNEUMATIC-A/B TANK PRESS	SP-90-08-3101F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	1490 030208	WTR	YES HYDRA ELECTRIC NO 32019-1	
FAILURE MODE-OUT OF TOLERANCE. OPENED AT 0.99 INSTEAD OF AT 0.9 PLUS OR MINUS 0.3 PSID. FAILURE ATTRIBUTED TO CORROSION FOUND ON INTERNAL COMPONENTS HINDERING MOVEMENTS OF THE PRESSURE PLATE-REQUIRING A SMALLER PRESSURE DIFFERENTIAL TO OPEN THE SWITCH.						
CORRECTIVE ACTION-1. IN REPLY TO RAR 46-98-08-899 ENGINEERING CHANGE PROPOSAL 1020 CHANGED FROM -1 TO 27-08130-5 SWITCH FOR WEAPON MISSILES ONLY. THIS INCORPORATED CHANGES TO ELIMINATE CORROSION. 2. ENGINEERING CHANGE PROPOSAL 7800 WAS APPROVED FOR A DESIGN DEFICIENCY CHANGE, WITHOUT COST FOR SLV MISSILES. 30/C PROTECTED. NO AUTHORIZATION TO PROCEED WAS RECEIVED.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3100F RINE OFF DISCONNECT COUPLING VALVE -POCKET	FAR 27-08129-1	1830 030203	FACTORY	YES AIRATERRA ROFL NO TM PRODUCTS	4499-1
FAILURE MODE-OUT OF TOLERANCE. PROBE TOO SHORT TO MAKE CONTACT WITH MATING PART. VALVE WILL NOT OPEN. A GROUND VALVE & POCKET WAS ERRONEOUSLY INSTALLED ON MISSILE. TWO GROUND FITTINGS MATED LACK 0.488 INCHES BEFORE CONTACT.						
CORRECTIVE ACTION-IN ANSWER TO RAR 3794-83 DATED 030423 THE VENDOR HAD ALERTED HIS PERSONNEL OF THIS PROBLEM AND STATED THAT TIGHTER 0/C. WILL BE ENFORCED. VENDOR ADDED NOTE TO GROUND AND AIRBORNE POCKET DRAWING INDICATING NOT INT EXCHANGEABLE. VENDOR ADDED USE OF A GAGE TO A TEST PROCEDURE TO DETECT A WRONGLY INSTALLED PART. REVISION C TO RYT-1 01-010. THIS WAS APPROVED BY 60/A ON JULY 9, 1963. REFERENCE RAR A-99-08-3827.						
PNEUMATIC-A/B TANK PRESS	MG-89-08-3088-F LOW TANK PRESSURE REGULATOR	FAR 27-08101-03	1300 030131	FACTORY	YES NO	
FAILURE MODE-OUT OF TOLERANCE. PRESSURE REGULATOR 8/N 209-0394 AND 918-0280 FAILED WHEN THE SIMULATED MISSILE ULTAS & TANK PRESSURE READING OF 28.9 PSID FELL BELOW THE ALLOWABLE 29.3 PLUS OR MINUS 0.3 PSID DURING LEAKAGE FILL. FAILURE WAS CONFIRMED AS BOTH REGULATORS WERE ON THE LOW SIDE OF THE REQUIRED LEAKAGE FILL BAND OF 28.3 PLUS OR MINUS 0.3 PSI						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIV DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-LEAK FIXED.						
PNEUMATIC-A/B TANK PRESS	SP-90-08-3112F RESTRICTOR-LOX PRESSURE REGULATOR SENSING	FAR 27-08187-1	1900 830213	WTR	YES 60/C NO DEL 10048	995169
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE EXCESSIVE RESTRICTION OF HELIUM FLOW. DID NOT FLOW THE REQUIRED 2.03 TO 2.90 S.C.F.H. CAUSE, INCORRECT DENSITY OF SINTERED MATERIAL.						
CORRECTIVE ACTION-ECP 1598-1, APPROVED MARCH 8, 1963. AUTHORIZED REPLACEMENT BY AN ORIFICE TYPE RESTRICTOR.						
PNEUMATIC-A/B TANK PRESS	SP-90-08-3101F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	1490 830204	WTR	YES HYDRA ELECTRIC NO 32018-1	996439
FAILURE MODE-OUT OF TOLERANCE. OPENED AT 0.59 INSTEAD OF AT 0.9 PLUS OR MINUS 0.3 PSID. FAILURE ATTRIBUTED TO CORROSION FOUND ON INTERNAL COMPONENTS HINDERING MOVEMENTS OF THE PRESSURE PLATE-REQUIRING A SMALLER PRESSURE DIFFERENTIAL TO OPEN THE SWITCH.						
CORRECTIVE ACTION-1. IN REPLY TO RAR AG-98-08-899 ENGINEERING CHANGE PROPOSAL 1980 CHANGED FROM -1 TO 27-08130-1 SW ITEM FOR WEAPON MISSILES ONLY. THIS INCORPORATED CHANGES TO ELIMINATE CORROSION. E. ENGINEERING CHANGE PROPOSAL 7800 WAS APPROVED FOR A DESIGN DEFICIENCY CHANGE, WITHOUT COST FOR SLY MISSILES. 60/C PROTECTED. NO AUTHORIZATION TO PROCEED WAS RECEIVED.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3100F RINE OFF DISCONNECT COUPLING VALVE -POPPET	FAR 27-08129-1	1830 830203	FACTORY	YES AIRTERRA ROYL NO VM PRODUCTS 4488-1	993224
FAILURE MODE-OUT OF TOLERANCE. PROBE TOO SHORT TO MAKE CONTACT WITH MATING PART. VALVE WILL NOT OPEN. A GROUND VALVE & POPPET WAS ERRONEOUSLY INSTALLED ON MISSILE. TWO GROUND FITTINGS MATED LACK 0.486 INCHES BEFORE CONTACT.						
CORRECTIVE ACTION-IN ANSWER TO WCAR 3754-83 DATED 630423 THE VENDOR HAD ALERTED HIS PERSONNEL OF THIS PROBLEM AND STATED THAT TIGHTER G.C. WILL BE ENFORCED. VENDOR ADDED NOTE TO GROUND AND AIRBORNE POPPET DRAWING INDICATING NOT INT EXCHANGEABLE. VENDOR ADDED USE OF A GAGE TO A TEST PROCEDURE TO DETECT A WRONGLY INSTALLED PART. REVISION C TO RTT-1 01-010. THIS WAS APPROVED BY 60/A ON JULY 9, 1963. REFERENCE RAR A-99-08-3827.						
PNEUMATIC-A/B TANK PRESS	ME-89-08-3098-F LOX TANK PRESSURE REGULATOR	FAR 27-08101-53	1800 630131	FACTORY	YES NO	993224
FAILURE MODE-OUT OF TOLERANCE. PRESSURE REGULATOR 8/11 209-0484 AND 912-0880 FAILED WHEN THE SIMULATED MISSILE ULTRAS TANK PRESSURE READING OF 38.8 PSID FELL BELOW THE ALLOWABLE 28.3 PLUS OR MINUS 0.3 PSID DURING LEAKAGE FILL. FAILURE WAS CONFIRMED AS BOTH REGULATORS WERE ON THE LOW SIDE OF THE REQUIRED LEAKAGE / BAND OF 28.3 PLUS OR MINUS 0.3 PSI						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE YME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
6.							092073
CORRECTIVE ACTION-EXTENSIVE TESTING OF THREE REGULATORS AT STELLARDYNE AND GAS FLOW LAB TO DETERMINE WHAT STELLARDYNE CONFIGURATION CHANGES WILL BE NECESSARY TO SUPPORT MERCURY ROCKET 130-D; ALSO TO SIMULATE ACTUAL LEAKAGE FILL DU RING COUNTDOWN.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3104F HELIUM CHANGEOVER VALVE-O-RING	PAR 27-06118-11	87F 030129	FACTORY	YES NO	ROBERTSON TOM 1090-25001	093049
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE WAS DUE TO A TORN SILICONE O RING SOFTENED BY CONTACT WITH SILICONE OIL, INTRODUCED DURING VALVE REMOVAL. A STRIPPED GEAR TRAIN, CAUSED BY WRONG POLARITY, PREVENTED VALVE FROM OPERATING.							
CORRECTIVE ACTION-CONFIRMED. 1. 60/A TEST PERSONNEL WERE NOTIFIED OF CAUSE OF GEAR TRAIN FAILURE. A COPY OF EOP 110-113 WAS ADDED TO THE INSPECTION FOLDER OF THIS VALVE TO ASSURE PROPER TESTING. 2. THE VALVE WAS FORWARDED TO VENDOR FOR REPAIR.							
PNEUMATIC-A/B TANK PRESS	N2-99-08-3123F STAGING DISCONNECT-FUEL PRESSURIZATION	PAR 27-06124-3	2000 030129 030129	FACTORY	YES NO	MADLEY 10717-13	094117
FAILURE MODE-CONTAMINATION. LEAKAGE OF 100 SCIM OBSERVED. ALLOWABLE IS 25 SCIM. SOME LEAKAGE WAS DUE TO SHALLOW GROOVES IN THE TEFLON SEALS. GROOVES CAUSED BY METAL PARTICLE SCOURING. OTHER LEAKAGE IS ATTRIBUTED TO METAL PARTICLES ON THE SEAT.							
CORRECTIVE ACTION-PER PAR N2-99-08-3640 60/A NOTIFIED 8-C. AND PRODUCTION OF FAILURE CAUSE. ACTION WAS REQUESTED TO INSURE THAT THE COUPLING IS CLEAN TO REQUIRED STANDARDS PRIOR TO MATING. THE BANYAN 8-187 DATED JUNE 24, 1964 REQUESTED THE PNEUMATIC SYSTEM OF MISSILE 2000 BE CHECKED FOR POSSIBLE CONTAMINANTS. NONE WERE FOUND. INSTALLATION WILL BE E PER EOP 335.9-1 AND 343.1-2.							
PNEUMATIC-A/B TANK PRESS	N2-99-08-3121F STAGING DISCONNECT-FUEL PRESSURIZATION	PAR 27-06124-1	2000 030129	FACTORY	YES NO	MADLEY 10717-13	094118
FAILURE MODE-CONTAMINATION. LEAKAGE OF 100 SCIM OBSERVED. ALLOWABLE IS 25 SCIM. SOME LEAKAGE WAS DUE TO SHALLOW GROOVES IN THE TEFLON SEALS. GROOVES CAUSED BY METAL PARTICLE SCOURING. OTHER LEAKAGE IS ATTRIBUTED TO METAL PARTICLES ON THE SEAT.							
CORRECTIVE ACTION-PER PAR N2-99-08-3640 60/C NOTIFIED 8-C. AND PRODUCTION OF FAILURE CAUSE. ACTION WAS REQUESTED TO INSURE THAT THE COUPLING IS CLEAN TO REQUIRED STANDARDS PRIOR TO MATING. THE BANYAN 8-187 DATED JUNE 24, 1964 REQUESTED THE PNEUMATIC SYSTEM OF MISSILE 2000 BE CHECKED FOR POSSIBLE CONTAMINANTS. NONE WERE FOUND. INSTALLATION WILL BE E PER EOP 335.9-1 AND 343.1-2.							

GENERAL DYNAMICS
CONVAIR DIVISION

JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE CIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	N2-9D-08-3120F STAGING DISCONNECT-LOX PRESSURE, 8 27-08124-3 USTAINER	FAR	182D 030128	WTR	NO YES 10:17-11	NO MADLEY	093260
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE AT 60 PSI. RATE OF LEAK UNKNOWN. ALLOWED RATE IS 25 SCIM. USING HELIUM. TESTING FOUND LEAK TO BE WITHIN ALLOWABLE. NO DEFECTS WERE FOUND THAT COULD CAUSE LEAKAGE IN EXCESS OF 25 SCIM. MATING BOOSTER-HALF DISCONNECT WAS NOT SENT IN FOR ANALYSIS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. TANK SANVAN 5-172 DATED 830514 WAS SENT TO V.A.F. BASE STATING-LEAK RATE WAS 3.8 SCIM. ALLOWABLE IS 25 SCIM OF HELIUM. MATING BOOSTER HALF WAS NOT SENT IN FOR ANALYSIS. IT WAS RECOMMENDED THAT BOTH MATING DISCONNECT VALVES BE SENT IN IF PROBLEM OCCURS AGAIN.							
PNEUMATIC-A/B TANK PRESS	N2-9D-08-3093-F FLEXIBLE LINE, BELLOWS	FAR 27-08218-1	830117	FACTORY	YES NO	FLEXIBLE METAL MOSE MS489	098739
FAILURE MODE-LEAK EXTERNAL-THE FLEXIBLE LINE REPORTEDLY FAILED WHEN IT DEVELOPED A LEAK IN THE FLEX PORTION OF THE LINE. THE FAILURE, RESULTING IN LEAKAGE THROUGH THE BELLOWS, IS ATTRIBUTED TO A CORROSIVE ATTACK BY CHLORIDE ON THE STAINLESS STEEL.							
CORRECTIVE ACTION-ALL FUTURE ASSEMBLIES WILL BE CLOSELY INSPECTED FOR CONFORMANCE TO GO/C CLEANING REQUIREMENTS.							
PNEUMATIC-A/B TANK PRESS	A-59-08-3094-F TUBE ASSY	FAR 27-81003-89	830117	FACTORY	YES NO	GO/C	098740
FAILURE MODE-LEAK EXTERNAL. TUBE ASSY FAILED DURING A PRESSURE CHECK. ASSY LEAKED AROUND THE CONNECTIONS. FAILURE WAS DUE TO FLARING TOOL DIE MISALIGNMENT AND WEAR.							
CORRECTIVE ACTION-ADOPTION OF 10X MAGNIFICATION AND IMPROVED LIGHTING IN THE TUBE FLARE INSPECTION AREA. PERSONNEL WERE INSTRUCTED AND CAUTIONED TO EXERCISE CARE IN ADHERING TO ALL SECTIONS OF NBS 24-1688 FOR TUBE END FLARES. ALL FLARING CENTERS AND DIES WERE PURGED AND REINSPECTED FOR CONFORMITY.							
PNEUMATIC-A/B TANK PRESS	SP-9D-08-3103F RESTRICTOR-LOX PRESSURE REGULATOR SERRING	FAR 27-08187-1	157D 030118	WTR	YES NO	10048	
FAILURE MODE-OUT OF TOLERANCE. FAILURE CAUSED A 31 PSIG PRESSURE INSTEAD OF THE REQUIRED 23 TO 28 PSIG IN LOW TANK ULLAGE. RESTRICTOR ALLOWED AN INSUFFICIENT AMOUNT OF HELIUM TO FLOW, 2.85 TO 2.90 SCFM REQUIRED. RESTRICTOR FAILED TO MEET FLOW REQUIREMENTS BECAUSE OF INCORRECT DENSITY OF THE SINTERED MATERIAL.							
CORRECTIVE ACTION-ENGINEERING CHANGE PROPOSAL 1888-1, APPROVED MARCH 8, 1965, AUTHORIZED REPLACEMENT BY AN ORIFICE							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
TYPE RESTRICTOR. VEHICLE 1570 REMOVED INTO 350D.							096430
PNEUMATIC-A/B TANK PRESS	DAB74 L3-4MO-01-137 RESTRICTOR-FLUID FLOW	COMPOSITE-PRD/DPL 27-08167	1570 030114	2-3	YES NO		096303
FAILURE MODE-OUT OF TOLERANCE. THE PROGRAMMED PRESSURE SWITCH DID NOT ALLOW ENOUGH GAS TO FLOW. SYSTEM EFFECT-OPERATION TOO HIGH. THE LOX TANK WAS OVER PRESSURIZED. THROWING THE PCU INTO EMERGENCY AND CRACKING THE AIRBORNE RELIEF VALVE. VEHICLE EFFECT-COMPOSITE ASPECTED AND RESCHEDULED. CORRECTIVE ACTION-FAILED PART REPLACED.							091000
PNEUMATIC-A/B TANK PRESS	A-99-08-3090F SUPPORT DUCT, LOX RELIEF VALVE	FAR 27-01091-1	50F 030111	FACTORY	YES NO		091000
FAILURE MODE-EXTERNAL LEAKAGE. PIN HOLE LEAKS IN DUCT WELD BEAD. LEAK TESTS MADE EARLIER USE COMPRESSED AIR, NOT HELIUM. NO REQUIREMENT EXISTS TO LEAK TEST THE WELD BEAD. CORRECTIVE ACTION-FAILURE CONFIRMED. ON DATE 030128 OPERATIONAL PLANNING AND PRODUCTION ORDER 27-01091-1 WAS REVISED REQUIRING HELIUM FOR AT PSIC PRESSURE TEST. EOP 395-07A PARAGRAPH 4.7.5 REQUIRES THE BUBBLE FLUID LEAK TEST BE PERFORMED ON THE BEAN WELD.							091007
PNEUMATIC-A/B TANK PRESS	M2-99-08-3081F ADAPTER FITTING, HELIUM BOTTLE TO 7-87980-9 TUBING	FAR 7-87980-9	193D 030103	FACTORY	YES NO		091007
FAILURE MODE-STRUCTURAL. TWO ADAPTERS LEAKED AT THE THREADS. ONE ADAPTER WAS CRACKED. CAUSE WAS SLAG INCLUSIONS IN THE 303 CRES STEEL. DATE OF SECOND FAILURE WAS 2-1-63. CORRECTIVE ACTION-FAILURE CONFIRMED. CIC 27009 AND CHANGE D OF 7-87980, DATED 8-23-63, ADDED A206, 302, 304 AND 321 AS ALTERNATE MATERIALS WITH A206 PREFERRED.							091007
PNEUMATIC-A/B TANK PRESS	A-99-08-3100C DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	193D 021226	FACTORY	YES HYDRA ELECTRIC NO 32016-1		091007
FAILURE MODE-STRUCTURAL. ELECTRICAL RECEPTACLE FOUND BROKEN. PART WAS NOT RECEIVED FOR ANALYSIS. CORRECTIVE ACTION-FAILURE NOT CONFIRMED. A MODIFIED SWITCH 27-08130-5 REPLACED THE -1 SWITCH FOR THE E AND F MISSILE CO. PER EOP 1923. THIS -5 SWITCH HAS A PLANNED ELECTRICAL RECEPTACLE BOLDED TO THE CASE. BAR AG-08-08-3030 ISSUED							091007

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1986

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI TIME DIF	VENDOR NAME VENDOR PART NO
ON DATE 830409 RECOMMENDED SWITCH CHANGE BE EXTENDED TO THE D-SERIES MISBILES.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3089F BOILOFF VALVE	FAR 27-08398-7	87F 021217	FAC'ORY	YES CALMEC NO 122298-3-1	093262 090685
FAILURE MODE-LEAKAGE-EXTERNAL. DID NOT HOLD PRESSURE FROM 1 TO 4 PSIG. FOUND TO BE LEAKING EXCESSIVELY IN BOTH RELIEF AND SHUTOFF MODES. REPEATED IMPACT OF POPPET IS CAUSING THE REL-F SEAT TO SHEAR ALONG SEALING SURFACE.						
CORRECTIVE ACTION-CONFIRMED. GOYA ON 11 JUNE 1983, APPROVED VENDOR CHANGE VCP-002, WHICH MODIFIED THE SEAL TO ELIMINATE EXCESSIVE PRESSURE ON THE SEAL GROOVE, WHICH HAD CAUSED CRACKING.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3089F	FAR 27-08398-7	87F 021212	FACTORY	YES CALMEC NO 122298-3-1	090183
FAILURE MODE-INTERNAL LEAKAGE. FAILED TO HOLD PRESSURE AT 4 PSIG CAUSED BY FOREIGN MATERIAL IN THE VALVE AT INSTALLATION, WHICH TORE THE REL F GASKET AND THE SEAT THUS PREVENTING COMPLETE CLOSING OF PILOT VALVE.						
CORRECTIVE ACTION-FAILURE CONFIRMED. FAR A-99-08-3807 REQUESTED THAT VENDOR BE NOTIFIED OF FAILURE CAUSE. VCAR 3300 -63 OF MARCH 11, 1983 DOCUMENTED THAT VENDOR HAD INFORMED THEIR ENGINEERING ASSEMBLY AND QUALITY CONTROL DEPARTMENTS OF THIS PROBLEM.						
PNEUMATIC-A/B TANK PRESS	39-98-08-3093-F BOILOFF VALVE SENSOR	FAR 27-01440-825	131D 021211	1-2	YES GO/C NO	090741
FAILURE MODE-OUT OF SPECIFICATION-VALVE ASSY FAILED WHEN LOX RELIEF AND SHUTOFF VALVE CRACKED AND RESEATED AT 6.0 A NO 9.7 PSIG DURING A LOX DRAIN SEQUENCE AFTER A DPL. DURING THE DPL, THE CRACK AND RESEAT PRESSURES WERE 4.03 AND 4.33 PSIG. SENSOR WAS OUT OF ADJUSTMENT WHEN RECEIVED FOR FAILURE ANALYSIS. CAUSE OF FAILURE IS ATTRIBUTED TO INSTRUMENTATION PROBLEMS IN THE FIELD.						
CORRECTIVE ACTION-TWR SENT TO FIELD PERSONNEL OF THE RESULTS OF FAILURE ANALYSIS AND CAUSE OF FAILURE. CHECKOUT PROCEDURE 27-91891-8K1 WAS MADE TO ELIMINATE RECALIBRATION OF THE UNIT WHILE VEHICLE IS IN THE HORIZONTAL POSITION. PLANNING OPERATION 27-81433-7 CHANGED TO INSURE THAT ALL RADIAL SHARP EDGES OF THE SEAT-RETAINER ARE DIMENSIONALLY CORRECT AND FREE OF BURRS.						
PNEUMATIC-A/B TANK PRESS	A-90-3089F PRESSURE REGULATOR, FUEL TANK	FAR 27-08102-83	94E 021118		NO P037-2 NO	
FAILURE MODE- OUT OF TOLERANCE. HIGH OUTPUT PRESSURE OF 63.84 DURING A MIPCHE TEST. ALLOWABLE LIMITS ARE 36.77 TO 63.81 PSIG. CAUSE OF HIGH OUTPUT WAS SLOW RESPONSE OF THE NITROGEN IN THE DENISE LINE CAUSING REGULATOR TO OVER SHOOT.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
							890910
	CORRECTIVE ACTION-FAILURE CONFIRMED. ECP 1000-1 REDUCED REGULATOR INLET PRESSURE FROM 3000 TO 1500 PSIG WHICH REDUCES PRESSURE OVER SHOOT.						
PNEUMATIC-A/B TANK PRESS	AQ102-0055/Q8-008-00-13 DUCTING AND TUBING	FLIGHT	13F 021114	18.4	NO NO		693141
	FAILURE MODE-STRUCTURAL. FIRE FOLLOWED BY AN EXPLOSION FROM UNKNOWN SOURCE APPARENTLY RESULTED IN A BREAK IN THE PRESSURIZATION LINE, WHICH CAUSED THE LOSS OF HELIUM PRESSURIZATION TO THE LOX TANK.						
	SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. AT 19.9 SECONDS THE LOX TANK PRESSURE DECAYED FROM 23.2 PSIG TO 15.3 PSIG AT 30 SECONDS, THEN GRADUALLY INCREASED TO 25.0 PSIG AT 65 SECONDS. AT BECC THE PRESS WAS 22.5 PSIG.						
	VEHICLE EFFECT-NONE.						
	CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3063F PRESSURE REGULATOR, LOX TANK	FAR 27-08101-23	1260 021112	1-1	YES NO	D.H. MADLEY NO 10705-23	891226
	FAILURE MODE-CONTAMINATION. LOX TANK PRESSURE REGULATOR WAS SUBMITTED FOR ANALYSIS TO DETERMINE IF INTERNAL DAMAGE OCCURRED AFTER CONTROLLER DIAPHRAGM HAD BEEN SUBJECTED TO A DIFFERENTIAL PRESSURE OF 30 PSIG. ANALYSIS REVEALED EARLY OPERATION DUE TO FOREIGN PARTICLES FOUND IN THE SHUT OFF VALVE ORIFICE WHICH CHANGED FLOW RATE AND OUTLET PRESSURE.						
	CORRECTIVE ACTION-CONFIRMED DAMAGE, BUT NOT TO DIAPHRAGM. NOTIFIED WTR THAT A DIFFERENTIAL PRESSURE OF 30 PSIG DID NOT DAMAGE DIAPHRAGM. AIR FORCE REJECTED ACTION OF RAR A-9L-08-002 WHICH RECOMMENDED A PLUS FOR THE RELIEF VALVE VENT DUCT. PER WTR THE AIR FORCE DIRECTED THAT WENT BE COVERED ANY TIME MISSILE IS IN STORAGE OR TRANSPORT.						
PNEUMATIC-A/B TANK PRESS	9P-90-08-3102C LOX TANK PRESSURE REGULATOR/DIAPHR 27-08101-33 ACH	FAR 27-08101-33	1180 021126	WTR	YES NO	FLUIDGENICS NO P242-12	890481
	FAILURE MODE-FAIL DURING OPERATION. SUSPECTED DAMAGE DONE TO SENSING CONTROLLER DIAPHRAGM. TWR 11-179 OF NOV 12, 1966 FROM DESIGN STATED THAT FLUIDGENICS REGULATORS ARE NOT SENSITIVE TO THIS DIFFERENTIAL AND NEED NOT BE REPLACED FOR THIS REASON. REGULATOR WAS NOT REPLACED.						
	CORRECTIVE ACTION-NO FAILURE. NO ANALYSIS REQUIRED-PER TWR VANSAN 11-371 DATED NOV 27, 1962.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	D/F DATA SOURCE PART NUMBER	VEHICLE DATE D/F	SITE TIME D/F	PRE D/F	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	SP-90-08-3084F PRESSURE REGULATOR, FUEL TANK	FAR 27-0810E-7	118D 021108	1-2	NO	B.M. MADLEY YES 10705-23	891489
FAILURE MODE-STRUCTURAL. SUBMITTED FOR ANALYSIS PER PNEUMATIC DESIGN TWR SANVAN 11-179 TO SEE IF SENSING CONTROLLER DIAPHRAGM WAS DAMAGED AFTER REGULATOR WAS SUBJECTED TO A DIFFERENTIAL PRESSURE OF 60 PSI. (FAILED PART WAS A BATO 5 REGULATOR, FAR A-90-30-3371). ANALYSIS DID NOT REVEAL ANY DIAPHRAGM DAMAGE.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. TWR SANVAN 1-332, DATED 1-23-68, INFORMED WTR THAT DIAPHRAGM HAD NOT BEEN DAMAGED.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3038 BOILOFF VALVE	FAR 27-08558-3	13F 021030	6	YES	AIRSEARCH NO 122296-3-1	895885
FAILURE MODE-LEAK EXTERNAL. LEAKED INTERMITTENTLY PAST VALVE DUE TO BUTTERFLY OVER TRAVEL OF APPROXIMATELY ONE DEGREE IN THE CLOSED POSITION. THIS CONDITION IS TYPICAL OF PET. LOT 1.							
CORRECTIVE ACTION-UNKNOWN. FAILURE CONFIRMED. TWR 304-N29 540-542 OF 12 DEC 1962 WAS SENT TO ETR, WTR, AND PLATTSBU RG INFORMING THEM OF THE OVERTRAVEL PROBLEM AND RECOMMENDED THAT INSTALLED VALVES OF PET LOT 1 BE KEPT UNDER SURVEILLANCE. ALL THREE SITES REPLIED THAT NONE OF THE SUBJECT VALVES WERE AT THESE SITES.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3032F BOILOFF VALVE	FAR 27-08558-7	06F 021012	RG	PLATTSBU	YES CALMEC NO 122296-3-1	898110
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. WOULD NOT RESEAT AFTER OPERATION. FOUND TO LEAK EXCESSIVELY IN DOT M RELIEF AND SHUTOFF MODES. REPEATED IMPACT OF POPPET IS CAUSING THE REL-F SEAT TO SHEAR ALONG SEALING SURFACE.							
CORRECTIVE ACTION-CONFIRMED. GO/A ON JUNE 11, 1963 APPROVED VENDOR CHANGE VCP-U02 WHICH MODIFIED THE SEAL TO ELIMINATE EXCESSIVE PRESSURE ON THE SEAL GROOVE WHICH HAD CAUSED CRACKING.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3035F TUBE-RIGID	FAR 27-01489-13	70F 021010	YES	YES	NO	895886
FAILURE MODE-STRUCTURAL. TUBE SLEEVE CRACKED. THE CRACK IS ATTRIBUTED TO SULFIDE ATTACKS INHERENT IN THE MATERIAL AND TO OVER TIGHTENING.							
CORRECTIVE ACTION-CONFIRMED. GO/C ON 12 JAN 1963 RELEASED MIL-P-5509A AMENDMENT 7. THIS ELIMINATES USE OF TYPE 303 IN BARS, SHAPES, AND FORGINGS. FAR A-90-08-3012 OF 10 DEC 1962 RECOMMENDED THE USE OF TYPE 301 OR 307 STAINLESS STEEL IN PLACE OF 303.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-98-08-3051F TUBE ASSEMBLY, HELIUM SUPPLY	FAR 27-01009-07	72P 021010	DYESS	YES NO		091077
FAILURE MODE- EXTERNAL LEAKAGE. SLIGHT LEAK AT 1900 PSIG DUE TO METAL DISTORTION DURING FLARING. CAUSED BY TOOL MIS MATCH AND TUBE ROTATION DURING FLARING.							
CORRECTIVE ACTION- SD/A Q.C. ACTION INCLUDED USE OF A 10 TIMES MAGNIFICATION AND OF IMPROVED LIGHTING IN THE FLARE INSPECTION AREA. PERSONNEL WERE CAUTIONED TO ADHERE TO ALL SECTIONS MPS 24.1086 FOR FLARE ENDS. ALL TOOLS WERE INSPE CTED FOR CONFORMITY. REFERENCE PAR A-98-08-3010.							
PNEUMATIC-A/B TANK PRESS	A-98-08-3045C DISCONNECT-AIRBORNE; FUEL TANK SEN	FAR 27-08144-11	14F 020926	ETR	YES ON MARK YES 2-9160-4		092942
FAILURE MODE-OUT OF TOLERANCE. UNABLE TO MATE GROUND HALF TO AIRBORNE HALF DURING CHECKOUT.CAUSE NOT KNOWN. PART NO T RECEIVED FOR ANALYSIS.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3030F VALVE BOILOFF	FAR 27-08396-3	77F 020919	WALKER	YES AIRRESEARCH NO 122598-3-1		096135
FAILURE MODE-INTERNAL LEAKAGE. LEAKED PAST VALVE DUE TO BUTTERFLY OVERTRAVEL OF APPROXIMATELY ONE DEGREE IN THE CLO SED POSITION. BUTTERFLY WAS ALSO IMPROPERLY POSITIONED ON THE SHAFT. THIS CONDITION IS TYPICAL OF PET LOT 1.							
CORRECTIVE ACTION-UNKNOWN. FAILURE CONFIRMED. TAN 804 N2R N2E 940 OF DEC 12, 1962 WAS SENT TO STR MTR AND PLATTSBUR G INFORMING THEM OF THE OVER TRAVEL PROBLEM AND RECOMMENDED THAT INSTALLED VALVES OF PET LOT 1 BE KEPT UNDER SURVEIL LANCE.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3077F MANUAL SHUTOFF VALVE, O-RINGS	FAR 27-08108-3	64E 020919	ORIF-1	YES PEACOCK NO 81369		098806
FAILURE MODE-INTERNAL LEAKAGE. LEAK PAST TWO VALVES IN CLOSED POSITION. CAUSED BY DAMAGED BUTTERFLY O/RINGS. THE BE ALS WERE DAMAGED BY BUTTERFLY PASSING THE FULLY CLOSED POSITION DUE TO LACK OF MECHANICAL STOPS. THESE VALVES WERE O P ORIGINAL DESIGN. VENDOR HAS SINCE MADE DESIGN CHANGES.							
CORRECTIVE ACTION-FAILURE CONFIRMED. SD/A VENDOR CHANGE PROPOSAL 2 OF JUNE 18, 1961 WAS APPROVED AS VENDOR CHANGE 6 ON DRAWING 81369 ON JUNE 23, 1961. THIS CHANGE PROVIDED MECHANICAL STOPS TO PREVENT O/RING DAMAGE.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/S TANK PRESS	A-99-08-3043F HELIUM CHANGE-OVER VALVE MOTOR	FAR 27-08116-11	920910	FACTORY	YES NO	ROBERT ANAM PU LTON 3098-22001	091080
FAILURE MODE-OUT OF TOLERANCE. WOULD NOT CLOSE. CAUSED BY IMPROPER VENDOR ASSEMBLY OF THE VALVE MOTOR. PERMANENT MA GNETS INSTALLED IN WRONG POSITION REDUCE FLUX LINES AND PREVENT REQUIRED STARTING TORQUE TO CLOSE VALVE.							
CORRECTIVE ACTION- VENDOR ANSWERED RAR A-99-08-3808 BY STATING THAT VALVE MUST HAVE BEEN DISASSEMBLED AFTER LEAVING THEIR PLANT.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3038F REGULATOR-FUEL	FAR 27-08102-25	142D 820914	WTR	NO NO	FLUIDGENICS 1243 4	091030
FAILURE MODE-FAIL DURING OPERATION. REPORTED PRESSURE DROP FOR TWO UNITS FROM 60 TO 40 PSIG IN 3 MINUTES DURING APC ME RUN. THIS IS NOT A FAILURE BUT IS A CHARACTERISTIC OF THIS REGULATOR. SITE PERSONNEL WERE NOT FAMILIAR WITH FLUID GENICS REGULATORS.							
CORRECTIVE ACTION-NOT CONFIRMED. SBAMA WILL SEND A INX TO ALL OPERATIONAL D SERIES SITES NOTIFYING THEM OF THESE TM O REJECTIONS PLUS INCLUDING AN INTERIM T.O. CHANGING CHARACTERISTIC DIFFERENCES BETWEEN FLUIDGENICS AND MADLEY REGULATORS. GO/A WILL CONFIRM BY A INX TO SBAMA. TECHNICAL ORDER SUPPLEMENT 21 3483-D-8-31-60 WAS ISSUED NOV. 16. 1 962.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3085F PRESSURE REGULATOR, LOX TANK	FAR 27-08101-33	99F 820913	WALKER	NO YES	FLUIDGENICS P836-1	091490
FAILURE MODE-ERRATIC OPERATION. PRESSURE ERRATIC CAUSING LOX TANK PRESSURE FLUCTUATIONS. ANALYSIS DID NOT REVEAL AN Y PROBLEM. SITE PERSONNEL DID ESTABLISH THAT FLUCTUATIONS WERE CAUSED BY THE GROUND H.C.U REGULATOR 323.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION. ACTION FOR THE H.C.U. REGULATOR WAS INITIATED BY E-C .P. 1892. DATED 8-28-62.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3038F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	820909	FACTORY	YES NO	HYDRA ELECTRIC 32018-1	091021
FAILURE MODE-OUT OF SPECIFICATION. TWO SWITCHES ACTIVATED AT 14.8 AND 14.8 PSIG. ALLOWABLE RANGE IS 13.8 TO 14.4 PS 16. SWITCHES WERE OUT OF ADJUSTMENT AS RECEIVED FROM VENDOR.							
CORRECTIVE ACTION-PER RAR A-99-08-3801, THE VENDOR WAS NOTIFIED OF THIS ANALYSIS AND REQUESTED TO TAKE TO ENSURE TH AT PROBLEM WILL NOT RECUR. VENDOR G. C. WILL WITNESS TESTING OF NEXT UNIT.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-99-08-3075F PRESSURE REGULATOR, LOX TANK, DIAP MIRACH	FAR 27-08101-21	213D 620831	FACTORY	YES NO	B.M. MADLEY 10704-33	994606
FAILURE MODE-OUT OF TOLERANCE. LEAK-FILL TANK PRESSURE FELL BELOW EOP 410.9 ALLOWABLE LIMIT. THE VALVE DIAPHRAGM WAS S IMPROPERLY INSTALLED CAUSING IT TO BE PINCHED. THIS CAUSED THE LOW PRESSURE.							
CORRECTIVE ACTION-FAILURE CONFIRMED. A COMPLETE 1/2" TOOL FOR INSERTING DIAPHRAGM WAS MADE ON MARCH 12, 1963 THUS EL IMINATING THE PROBLEM.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3037F STAGING DISCONNECT-LINE	FAR 27-08124-3	103F 620830	FACTORY	YES NO	MADLEY 10717-11	995939
FAILURE MODE-STRUCTURAL. THREAD SEIZURE AND GALLING. CAUSE COULD HAVE BEEN DUE TO LACK OF LUBRICATION, THREAD SURFA CE TENSION INCREASE DUE TO A POLY-CAP INSERT, AND SUSCEPTIBILITY TO GALLING DUE TO USE OF IDENTICAL MATERIALS IN CON TACT.							
CORRECTIVE ACTION-CONFIRMED. GO/A DESIGN ANSWER TO RAR A-99-08-700 STATES THAT A HARDWARE CHANGE WAS NOT RECOMMENDE D-MAINLY BECAUSE OF THE COST INVOLVED AND THAT ALL WEAPON SYSTEM PARTS WERE PROCURED. ALSO THE FAILURE RATE DOES NOT WARRANT A CHANGE.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3075F BOILOFF VALVE	FAR 27-08396-7E	620829	DYESS	YES NO	CALMEC 271-301J	996810
FAILURE MODE-OUT OF TOLERANCE. RESEAT PRESSURE OF 2.9 TO 3.1 PSIG WAS TOO LOW. ALLOWED LIMITS ARE 3.7 TO 5.0 PSIG. CAUSE PROBABLY WAS USE OF A TEST TOOL WHICH GAVE LOW READINGS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. GO/A TWA FXC 809 803 OF OCT 24, 1962 ADVISED DYESS OF THE RESULTS OF THIS ANALYSIS AND ADVISED A CHECK BE MADE OF TEST EQUIPMENT.							
PNEUMATIC-A/B TANK PRESS	A-99-08-3076F BOILOFF VALVE, POPPET	FAR 27-08396-7	38F 620829	LINCOLN	YES NO	CALMEC 271-301	991883
FAILURE MODE-STRUCTURAL. FAILED TO HOLD PRESSURE DUE TO A DAMAGED MAIN POPPET SEAT. THE SEAT WAS NOT SENT IN FOR AN ALYSIS ALONG WITH THE VALVE. VALVE, MINUS SEAT, FUNCTIONED NORMALLY DURING ANALYSIS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO ACTION RECOMMENDED SINCE POPPET WAS NOT SUBMITTED FOR ANALYSIS.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF	SITE	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	SP-90-08-3123F REDUCER FITTING-FLARED TUBE	FAR NONE	138D 620824	WTR	YES NO	COLLINS ENGINE CRIMING. MS-24399-30
<p>FAILURE MODE-EXTERNAL LEAKAGE. FITTING LEAKED AT A PRESSURE OF 1000 PSI. POSSIBLE CAUSE WAS MACHINE MARKS ON THE HEXAGON SEALING FACE-FINISH NOT BEING PER SPECIFICATION. ANOTHER CAUSE WAS POSSIBLE LOW TORQUE ON REDUCER AND R-SEAL.</p> <p>CORRECTIVE ACTION-NOT CONFIRMED. A MEMO TO RECEIVING INSPECTION PERSONNEL DATED OCT 18 1962 REQUESTED A 100 PERCENT INSPECTION OF HEXAGON FACE FOR 32 RNS FINISH REQUIREMENT. GO/A PURCHASING WAS INFORMED OF THE MACHINING MARKS ON THE REDUCER. THEY SAID THAT THE VENDOR HAS NOT BEEN APPROVED FOR THIS PART FOR TWO YEARS. THE ANSWER TO OPERATION REPORT ACTION REQUEST WAFD 020-8 OF SEPT 25, 1962 STATED DOCUMENTS INDICATED PROPER G.C. LURING ORIGINAL INSTALLATION.</p>						
PNEUMATIC-A/B TANK PRESS	A-90-08-3033F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-06104-5	13F 620824	WTR	YES NO	B.M. MADLEY 10526-7
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. HIGH NO GO RECEIVED ON CARD 104 AND 105 OF MARCHE DECK 401 AND RELIEF VALVE DID NOT RELIEVE. TAPE WAS FOUND AND REMOVED FROM RELIEF VALVE VENT. A RERUN OF PROCEDURE WAS SATISFACTORY. A CHIP OF PAINT TEMPORARILY LOGGED IN CONTROLLER ORIFICE COULD HAVE CAUSED THE PROBLEM.</p> <p>CORRECTIVE ACTION- GO/A TWT SAN VAN 7-399 OF JULY 30, 1962; NOTIFIED WTR OF THE FAILURE ANALYSIS.</p>						
PNEUMATIC-A/B TANK PRESS	A-98-08-3063F LOW TANK PRESSURE RELIEF VALVE	FAR 27-06105-5	88F 620850	WALKER	YES YES	B.M. MADLEY 10628-5
<p>FAILURE MODE-EXTERNAL LEAKAGE. EXCESS LEAKAGE. POSSIBLY CAUSED BY A TRANSIENT CONTAMINANT ON CONTROLLER POPPET. DURING SECOND ANALYSIS TEST, THE LEAKAGE WAS NOT EXCESSIVE.</p> <p>CORRECTIVE ACTION-FAILURE CONFIRMED. WALKER AIR FORCE BASE WAS NOTIFIED OF THIS ANALYSIS AND PERSONNEL WERE REQUESTED TO CHECK THE PRESSURIZATION SYSTEM OF 88F FOR CONTAMINATION. REF. RAR A-98-08-3080.</p>						
PNEUMATIC-C-A/B TANK PRESS	A-98-08-3071F BOILOFF VALVE, DIAPHRAGM	FAR 27-06396-5	40F 620817	WTR	YES NO	AIRRESEARCH 122296-3-1
<p>FAILURE MODE-INTERNAL LEAKAGE. LEAKING DUE TO BUTTERFLY SEAL NOT BEATING PROPERLY. PROBABLE CAUSE WAS INCREASED ACTUATOR PLATE MOVEMENT CAUSED BY POOR PRESSURIZATION. FIELD ADJUSTMENT OF THE SERVO RUPTURED THE SERVO DIAPHRAGM AFTER THE FAILURE. THIS PREVENTED AS IS CONDITIONAL FUNCTIONAL TESTING.</p>						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NOT CONFIRMED. VENDOR MODIFIED THE ADJUSTMENT PROCEDURE TO SEQUENCE BUTTERFLY TRAVEL POSITIONING AFTER PROOF PRESSURIZATION. THIS IS APPLICABLE TO BOIL OFF VALVES AFTER PET LOT 2.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3040F DIFFERENTIAL PRESSURE SWITCH	FAR 27-06130-1	13F 620814	UTR	YES NO	YES HYDRAELECTRIC NO 32018-1
FAILURE MODE-CONTAMINATION. SWITCH OPENED AT 0.4 PSID INSTEAD OF THE REQUIRED 0.9 PLUS OR MINUS 0.3 PSID. CORROSION ON INTERNAL COMPONENTS INTERFERED WITH PRESSURE PLATE MOVEMENT REQUIRED TO OPEN THE SWITCH.						
CORRECTIVE ACTION-CONFIRMED. ECP 1020 EFFECTIVE MAY 31, 1962 REQUIRES THAT ALL INTERNAL COMPONENTS BE HARD ANODIZED.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3043F HELIUM CHANGEOVER VALVE	FAR 27-06110-11	620814		NO YES	ROBERT SWAN FU LTON 1094-B2002
FAILURE MODE-INTERNAL LEAKAGE. REPORTED LEAKAGE. IT IS CONCLUDED THAT INADEQUATE VOLTAGE TO CLOSE/OPERATE THE VALVE CAUSED LEAKAGE. THIS IS A SECONDARY FAILURE.						
CORRECTIVE ACTION-FAILURE WAS NOT CONFIRMED NO CORRECTIVE ACTION REQUIRED.						
PNEUMATIC-A/B TANK PRESS	A-9R-08-3079F PRESSURE REGULATOR, LOX TANK	FAR 27-08101-33	44F 620813	WALKER	NO YES	FLUIDGENICS YES P938-1
FAILURE MODE-ERRATIC OPERATION. REGULATOR REPEATEDLY ROSE TO 30 PSIG CAUSING EMERGENCY BOIL OFF DURING A RETURN TO FIRST READINESS AS A RESULT OF AN ABORT. HELIUM SHUT OFF VALVE DID NOT CLOSE BUT INDICATED THAT IT WAS CLOSED. AN ELECTRICAL ERROR OF THE SHUTOFF VALVE APPARENTLY CAUSED THE BOIL OFF OPERATION. THE REGULATOR AND VALVE WERE REPLACED AND SYSTEM OPERATED SATISFACTORILY.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION TAKEN. SITE WAS TURNED OVER TO AIR FORCE ON 620910 W/IN SYSTEM OPERATING CORRECTLY.						
PNEUMATIC-A/B TANK PRESS	SP-98-08-3078C BOILOFF VALVE-CONTROLLER	FAR 27-90750-647	1780 620810	12	YES NO	
FAILURE MODE-OUT OF TOLERANCE. CRACK AND REPEAT PRESSURES WERE ABOVE ALLOWABLE RANGE OF 4.2 TO 4.8. ALSO AN EXCESSIVE FLOW FROM THE CONTROLLER VENT WHILE VALVE WAS IN RELIEF MODE. TESTS INDICATED THE CONTROLLER WAS AT FAULT. NO ANALYSIS WAS MADE AS VALVE WAS NOT SENT IN FOR ANALYSIS. THE BOILOFF VALVE WAS USED ON 1700.						

GENERAL DYNAMICS
CONVAIR DIVISION

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRJ OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-NONE NOT CONFIRMED.							994009
PNEUMATIC-A/B TANK PRESS	AAG2-0060/P2-48N-03-179 LO2 AND FUEL TANK REGULATORS-BELLA PHRAGMS	COMPOSITE-FRD/DPL	179D 920810	12	YES NO		994033
FAILURE MODE-STRUCTURAL. THE BELLAPHRAGMS IN BOTH THE AIRBORNE LO2 AND FUEL TANK REGULATORS WERE INVERTED. DUE TO THE BALL VALVES IN THE SENSING LINES ON THE MISSILE NOT BEING OPENED WHILE TRANSFERRING FROM TOWER TO PCU PRESSURIZATION.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. LO2 TANKING PORTION OF THE TEST WAS SCRUBBED.							
CORRECTIVE ACTION-BOTH REGULATORS WERE REPLACED.							
PNEUMATIC-A/B TANK PRESS	A-UP-08-3118F DIFFERENTIAL PRESSURE TRANSDUCER	FAR 27-00109-1	BAF 920807	RG	PLATTABU YES NO CRESCENT ENGIN EERING 89-5001		994037
FAILURE MODE-OUT OF TOLERANCE. OUT PUT TOO LOW. COULD NOT BE CALIBRATED. CAUSE NOT KNOWN. COMPONENT WAS DAMAGED AT CIRCUIT DISASSEMBLY. ANALYSIS NOT COMPLETED.							
CORRECTIVE ACTION-NO MEANINGFUL CORRECTIVE ACTION CAN BE TAKEN BECAUSE THE CAUSE OF TRANSDUCER FAILURE WAS NOT FOUND.							
PNEUMATIC-A/B TANK PRESS	AAG2-0060/P2-48N-01-179 BOILOFF VALVE CONTROLLER	COMPOSITE-FRD/DPL 27-01648-025	179D 920807	12	YES NO 60/C		994034
FAILURE MODE-LEAK. THE BOILOFF VALVE CONTROLLER WAS FOUND TO HAVE EXCESSIVE LEAKAGE.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE CONTROLLER WAS REPLACED AND THE INSTALLATION OPERATED SATISFACTORILY.							
PNEUMATIC-A/B TANK PRESS	A-1N-03-3099-F CURRENT COMPARTOR-TANK PRESS.	FAR 89-00900-302	920807	SCILLIN 8	YES NO DAYS FROM 3-002-120		
FAILURE MODE-OUT OF SPECIFICATION. CURRENT COMPARTOR REPORTEDLY FAILED WHEN METER ON LAUNCH OFFICERS CONSOLE INDICATING THE OUTPUT OF THE TRANSDUCER POWERED BY THIS COMPARTOR REPORTEDLY BEHAVED ERRATICALLY AND REGISTERED 9 PSI6 P RESURE ABOVE ACTUAL PRESSURE.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION TAKEN.						
PNEUMATIC-A/B TANK PRESS	SP-98-08-3038F BOILOFF VALVE CONTROLLER	FAR 27-91448-923	179D 620807	12	YES NO	894000 031022
FAILURE MODE-OUT OF TOLERANCE. VALVE CRACKED AT 5.2 AND RESEATED AT 4.6 PSIG. SPECIFIED VALUES ARE 4.0 AND 4.2 PSIG. CAUSE UNKNOWN. NO ANALYSIS MADE SINCE UNIT WAS DIS-ASSEMBLED IN THE FIELD. POSSIBLE CAUSE COULD HAVE BEEN IMPROPER LOCKWIRE APPLICATION.						
CORRECTIVE ACTION-NOT CONFIRMED. NO ACTION TAKEN.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3044F SOLENOID, CONNECTOR	FAR NEXT ASSY EQUAL 27 -08596-3	620801	WALALA	YES CHET ENGINEER YES MC 9030	091390
FAILURE MODE-FAIL DURING OPERATION. ALLOWED BOILOFF VALVE TO VENT WHILE BOIL OFF VALVE IS IN THE LOCKED-CLOSED POSITION. POSSIBLY CAUSED BY VOLTAGE BEING APPLIED WHEN PLUG VALVES ARE EITHER MATED OR DEMATED. FEMALE PLUG WAS FOUND 8 UNMATED. MALE PLUG, NOT SENT IN FOR ANALYSIS, COULD HAVE CAUSED FAILURE.						
CORRECTIVE ACTION-THE FAILURE WAS NOT CONFIRMED. ALL F SITES WERE SENT A COPY OF RAR A-98-08-3614 NOTIFYING THEM TO VERIFY THAT NO VOLTAGE IS APPLIED WHEN CONNECTING OR DISCONNECTING THE MALE PLUG.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3033F BOIL OFF VALVE	FAR 27-08398-3	620731	ALTUS	YES AIRESEARCH NO 122298-3-1	093933
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE AT 3 PSI PER HOUR. CAUSE NOT KNOWN. NO LEAKAGE WAS FOUND DURING ANALYSIS. POSSIBLE CAUSE MAY HAVE BEEN IMPROPERLY TORQUED ATTACHING BOLTS.						
CORRECTIVE ACTION-NOT CONFIRMED. TWO BOFS DATED SEPT 29, 1962 SENT TO ALTUS REQUESTING USE CORRECTIVE ACTION DESCRIBED IN TWR 980-509 BOF, DATED SEPT 5, 1962.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3031F MANUAL BOILOFF VALVE-SEAL	FAR 27-08108-1	31P 620719	DYESS	YES PEACOCK ENGINE NO ERING 51390	
FAILURE MODE-INTERNAL LEAKAGE. LEAKING PAST BUTTERFLY SEAL RING WHILE IN THE CLOSED POSITION. CAUSED BY OVER TORQUING OF THE BUTTERFLY AND SUBSEQUENT DAMAGE TO THE SEALING RING. OVER TORQUING WAS ALLOWED BY THE MECHANICAL STOPS NOT IN OPTIMUM LOCATION. VALVE HAD BEEN MODIFIED AS AN INTERIM FIX WHILE A REDESIGN WAS IN PROGRESS.						
CORRECTIVE ACTION-NONE. THE INTERIM FIX AND PERMANENT CORRECTION WERE ESTABLISHED BY VENDOR PRINT MODIFICATION 9 13						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
80J EFFECTIVE JUNE 20, 1961.							090747
PNEUMATIC-A/B TANK PRESS	A-99-08-3032F PRESSURE REGULATOR-FUEL	FAR 27-08102-53	920717	FACTORY	YES NO	FLUIDGENICS P837-1	095179
FAILURE MODE - FAIL TO OPERATE AT PRESCRIBED TIME. FAILED TO LOCK UP DURING THE THIRD LIFE CYCLE OF AN ENGINEERING EVALUATION TEST. THE O-RING HAD PASSED LIFE EXPECTANCY, THE PILOT WHIFT AND CONTROLLER POPPET FAILED DUE TO AN OVERAL QAD ON STOP VALVE DIAPHRAGMS.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	A-9N-08-3074C BOILOFF VALVE	FAR 27-08398-5	920709	ALTUS	YES NO	AIRESEARCH 122298-3-1	094931
FAILURE MODE-INTERNAL LEAKAGE. LEAKAGE AT 8 PSIG. VALVE DID NOT SEAT. CAUSE NOT KNOWN. NO ANALYSIS WAS MADE SINCE V ALVE WAS SENT BACK TO VENDOR.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3035F BOIL OFF VALVE	FAR 27-08398-5	377 920708	6	YES NO	AIRESEARCH 122298-3-1	095937
FAILURE MODE-FAIL DURING OPERATION. OPENING TIME WAS 3 SECONDS. VALVE SHOULD OPEN IN APPROXIMATELY ONE-HALF SECOND. POSSIBLE CAUSE COULD HAVE BEEN ICE BUILD-UP BEHIND BUTTERFLY DUE TO ENVIRONMENTAL CONDITIONS EXISTING AT D.P.L.							
CORRECTIVE ACTION-NOT CONFIRMED. RESULTS OF FAR ANALYSIS TRANSMITTED TO SITE PERSONNEL.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3022F BOILOFF VALVE	FAR 27-08398-7	920705	DYESS	YES NO	CALMEC 871-501J	095986
FAILURE MODE-OUT OF SPECIFICATION. CRACKING PRESSURE TOO HIGH AND WAS INCREASING WITH EACH TANKING. ALLOWABLE PRESSURE IS 3.7 TO 3.2 PSIG. CAUSE NOT KNOWN. POSSIBLY DUE TO SITE PERSONNEL UNFAMILIAR WITH VALVE SPECIFICATIONS AND OPERATING CHARACTERISTICS.							
CORRECTIVE ACTION-UNKNOWN. FAILURE NOT CONFIRMED. THE 913-8330F DATED 18 AUG 1968 INFORMED ALL SITES OF THE SPECIFICATIONS AND OPERATING CHARACTERISTICS OF THIS TYPE BOILOFF VALVE.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
310-SYSTEM						
PNEUMATIC-A/B TANK PRESS	AC-42-0034/82-001-42-75 REGULATOR-LOX TANK PRESSURE	CAPTIVE 27-08101-43	75F 620829	22 25	NO NO	890010
FAILURE MODE-FAIL DURING OPERATION. THE LOX PNEUMATIC REGULATOR INLET TEMPERATURE INDICATED AN ABNORMALLY RAPID INC REASE DURING THE TEST.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-PREATURE PROPULSION CUTOFF. TEST CONDUCTOR TERMINATED TEST.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	A-81-08-3034F PRESSURE REGULATOR, LOX TANK.	FAR 27-08101-33	75F 620827		BYCAMORE YES FLUIDDYNAMICS NO P938-1	891074
FAILURE MODE- OUT OF TOLERANCE. PRESSURE OVER SHOOT TO 29.9 PSIG. SPECIFIED RANGE IS 24.1 TO 26.8 PSIG. CAUSE UNKNOWN POSSIBLE CAUSES ARE A TEST SET UP DISCREPANCY OR A CALLED POPPET AND POPPET GUIDE.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. VENDOR AGREED ON JUNE 27, 1962, TO IMPROVE PROCESS FOR APPLYING OXY LUBRIC ANT AND TO IMPROVE ALIGNMENT OF SHAPT AND GUIDE. VENDOR ALSO ADDED A REQUIREMENT FOR A SMOOTH BLENDED RADIUS OF NOT TO INSERT A POSSIBLE SOURCE OF GALLING. THIS ACTION WAS FROM A PREVIOUS FAILURE.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3028F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	84E 620829	WTR	YES HYDRA ELECTRIC NO 32019-1	890730
FAILURE MODE-OUT OF TOLERANCE. CAUSE NOT KNOWN. COULD NOT BE DUPLICATED DURING ANALYSIS.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO ACTION WILL BE TAKEN. PREVIOUS ACTION INCLUDES ECP 1820, ECP 1820-1 AND -1C 01820 WHICH HAD AMOZIZED ALL INTERNAL PARTS PLUS INCLUDED SMALL DESIGN CHANGES.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3019F STAGING DISCONNECT/SEAL	FAR 27-08124-3	19F 620828	WTR	YES MADLEY NO 10717-11	890330
FAILURE MODE-EXTERNAL LEAKAGE. LEAKED AT 27 PSIG. CAUSE IS ATTRIBUTED TO TEFLON SEAL WORN AND SCRATCHED LOCALLY. PR ON A CONTAMINANT OR A BURR ON THE MATING HALF.						
CORRECTIVE ACTION-SITE PERSONNEL WERE NOTIFIED OF THE RESULTS OF THIS ANALYSIS AND THEY WERE REQUESTED THAT THE SYS TEM BE CHECKED FOR EVIDENCE OF CONTAMINATION. BY THIS TIME THE MISSILE HAD BEEN FIRED.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PRI OTM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	A-90-08-3040P REGULATOR, FUEL TANK PRESSURE	FAR 27-08102-33	67E 620626	WTR	YES NO	FLUIDGENICS MO P637-2
FAILURE MODE-OUT OF EXPECTED TEST VALUE. TOO HIGH A READ OUT ON CARDS 96 AND 97 OF MAPCHE DECK 220. CAUSE WAS NOT R EVEALED AT ANALYSIS. COULD HAVE BEEN TOLERANCE DIFFERENCE BETWEEN 60/A AND 08TF-1 CHECKOUT EQUIPMENT. A PARTIAL REST RICTION OF CONTROLLER ORIFICE BY A CONTAMINANT COULD CAUSE A HIGH LEAK FILL PRESSURE						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. AS OF NOV 29, 1962, 1,379 ON THIS TYPE OF REGULATOR WILL BE UNDER SURVEILLA NCE.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3011P FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	620625	08TF-1 W TR	YES NO	B.M. MADLEY MO 10528-7
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. RELIEVED AT TOO HIGH A PRESSURE-88.5. ALLOWABLE IS 84.8 TO 85.80. C AUSED BY MASKING TAPE COVERING PRIMARY CONTROLLER VENT PORTS.						
CORRECTIVE ACTION-WTR AND ALL APPLICABLE SITES WERE NOTIFIED OF THE RESULTS OF THIS ANALYSIS. ALL APPLICABLE MISBIL ES WERE INSPECTED FOR PRESENCE OF TAPE. NO OTHER TAPE WAS FOUND.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3027 FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	620625	WTR	YES NO	B.M. MADLEY MO 10528-7
FAILURE MODE-CONTAMINATION. FAILED TO REGULATE FUEL TANK PRESSURE PROPERLY. RESEATED LOW AT 82.8 PSIG. ALLOWABLE MI NIMUM IS 53.8 PSIG. CAUSED BY A PARTICLE OF PAINT LOADED IN THE CONTROLLER METERING ORIFICE.						
CORRECTIVE ACTION-CONFIRMED. A TWR WAS SENT TO U.A.FB AND ALL R AND D SITES TO ALERT PERSONNEL TO THE DANGERS OF CA RELASS PAINTING.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3063P LOX TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	31P 620623	DYESS	NO NO	B.M. MADLEY MO 10525-3
FAILURE MODE-OUT OF TOLERANCE. LOX PRESSURE INCREASED TO 31 PSIG AND OSCILLATED BETWEEN 26 AND 31 PSIG. THIS WAS CA USED BY A NORMAL LOX BLUING OPERATION WHICH DECREASES ULLAGE SPACE AND COMPRESSED THE GAS BEFORE IT CAN ESCAPE THR U AIRBORNE OR PCU RELIEF VALVES. THIS IS NOT A RELIEF VALVE FAILURE.						
CORRECTIVE ACTION-CONFIRMED THE PRESSURE OSCILLATION. 60/A REPORT P60101 OF FEB 19, 1962 STATED THAT PRESSURE OSCIL LATIONS OF ABOVE MAGNITUDE ARE NOT NORMAL TO THE PNEUMATIC SYSTEM. A COPY OF THIS FAR WILL BE SENT TO THE AIRFORCE OFFICE AND TO 60/A SERVICE ENGINEERING.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VEHICLE PART NO
PNEUMATIC-A/B TANK PRESS	A-98-08-3088P PRESSURE REGULATOR, LOX TANK	FAR 27-08101-33	31F 620823	DYESB	NO NO	FLUIDGENICS NO P938-1
<p>FAILURE MODE-OUT OF TOLERANCE. LOX PRESSURE INCREASED TO 31 PSIG AND OSCILLATED BETWEEN 31 AND 28 PSIG. THIS WAS CAUSED BY A NORMAL LOX SLUGGING OPERATION WHICH DECREASES VOLUME SPACE AND COMPRESSED THE GAS BEFORE IT CAN ESCAPE THE AIRBORNE OR PCU RELIEF VALVES. THIS IS NOT A RELIEF VALVE FAILURE.</p>						
<p>CORRECTIVE ACTION-CONFIRMED PRESSURE OSCILLATION. GO/A REPORT P65304 OF FEB 12, 1962 STATED THAT PRESSURE OSCILLATIONS OF THE ABOVE MAGNITUDE ARE NOT HARMFUL TO THE PNEUMATIC SYSTEM. A COPY OF THIS FAR WILL BE SENT TO THE AIR FORCE OFFICE AND TO GO/A SERVICE ENGINEERING.</p>						
PNEUMATIC-A/B TANK PRESS	A682-0857	COUNTDOWN	21D 520622	0-3	YES NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. COMMIT SEQUENCE FAULTS. TANK PRESSURE FAILED TO INCREASE AT PRESCRIBED TIME.</p>						
<p>SYSTEM EFFECT-OPERATION DOES NOT START. FLIGHT PRESSURE NOT OBTAINED IN LOX TANK.</p>						
<p>VEHICLE EFFECT-LAUNCH COUNTDOWN ABORTED AND RESCHEDULED.</p>						
<p>CORRECTIVE ACTION-UNKNOWN.</p>						
PNEUMATIC-A/B TANK PRESS	A8H-08-301TF HELIUM CHANGEOVER VALVE-GEAR	FAR 27-08116-11	50P 620821	ALTUS	YES NO	ROBERT SHAW FU LTON 1098-2201
<p>FAILURE MODE-STRUCTURAL. EXCESSIVE TIME DELAY IN CHANGING FROM INTERNAL TO EXTERNAL PRESSURIZATION. CAUSED BY A BROKEN GEAR THAT WAS OVERSTRESSED. GEAR ASSEMBLY IS MARGINAL IN DESIGN.</p>						
<p>CORRECTIVE ACTION-A 27-08116-13 REDESIGNED VALVE WAS AUTHORIZED FOR 317-38 VEHICLES BY WORK ASSIGNMENT PLAN 5514, A PROVED DEC-13-1962. THIS DESIGN RESULTS IN LOWER TOOTH LOADS. SAME VALVE NOT APPROVED FOR WEAPON SYSTEM.</p>						
PNEUMATIC-A/B TANK PRESS	A-98-08-3030P REGULATOR, FUEL TANK PRESSURE	FAR 27-08102-23	620818	DYESB	YES NO	MADLEY P637-1
<p>FAILURE MODE-ERRATIC OPERATION. RELIEF VALVE WAS POPPING JUST PRIOR TO LEAK FILL ON CARD 108 OF DECK 27-08401. CAUSE NOT REVEALED BY ANALYSIS. POSSIBLE CAUSES ARE A REGULATOR MALFUNCTION OR THE M.D.U. SENSE LINE IS CLOGGED BROKEN OR IMPROPERLY ATTACHED.</p>						
<p>CORRECTIVE ACTION-FAILURE NOT CONFIRMED. GO/A INFORMED ALL SITES OF THIS REJECTION, REQUESTING PERSONNEL TO CHECK IN</p>						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
OU SEMSE LINE FOR LEAKS OR LOOSE FITTINGS PRIOR TO REJECTION OF REGULATOR.						
PNEUMATIC-A/B TANK PRESS	A-9D-08-3010F STAGING DISCONNECT	FAR 27-08122-3	620612	WTR	YES	B.M. MADLEY NO
FAILURE MODE - LEAK EXTERNAL. MATED DISCONNECTS LEAKED DURING PERFORMANCE OF AP02-0133 SECTION 35. ANALYSIS REVEALED LEAKAGE WAS WITHIN SPECIFICATION LIMIT. LEAKAGE WHILE MATED WAS ATTRIBUTED TO A SCORED LOWER SEAL. LOWER MATED LIP SEAL WAS DIRTY AND SOMEWHAT SCORED.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED-GO/C ADVISED PERSONNEL THAT LEAKAGE WAS WITHIN SPECIFICATIONS. ALIGNMENT OF THE BOOSTER AND SUSTAINER DISCONNECTS WILL BE CHECKED.						
PNEUMATIC-A/B TANK PRESS	A-9D-08-3010F STAGING DISCONNECT	FAR 27-06122-1	620612	WTR	YES	B.M. MADLEY NO
FAILURE MODE-EXTERNAL LEAKAGE. MATED DISCONNECTS LEAKED DURING PERFORMANCE OF AP02-0133 SECTION 35. ANALYSIS REVEALED LEAKAGE WAS WITHIN SPECIFICATION LIMIT. LEAKAGE WHILE MATED WAS ATTRIBUTED TO A SCORED LOWER SEAL. LOWER MATED LI P SEAL WAS DIRTY AND SOMEWHAT SCORED.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED-GO/C ADVISED PERSONNEL THAT LEAKAGE WAS WITHIN SPECIFICATIONS. ALIGNMENT OF THE BOOSTER AND SUSTAINER DISCONNECTS WILL BE CHECKED.						
PNEUMATIC-A/B TANK PRESS	A-08-08-3013F STAGING DISCONNECT-SUSTAINER, FUEL 27-08123-3 TANK SENSING, SEAL	FAR 27-08123-3	75F 620607	BYCAMORE	YES	MADLEY NO 10718-9
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE IN EXCESS OF SPECIFICATION LIMITS ATTRIBUTED TO DIRT AND SCRATCHES ON THE SEAL AND POSSIBLY DUE TO SYSTEM CONTAMINANTS PREVENTING PROPER SEATING OF THE POPPET.						
CORRECTIVE ACTION-ON JULY 20, 1962 THE SITE PERSONNEL WERE NOTIFIED OF THE CAUSE OF FAILURE AND WERE REQUESTED TO CHECK SYSTEM FOR CONTAMINATION. THIS WAS DONE. NO CONTAMINATION WAS FOUND.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3026F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	620608	FACTORY	YES	HYDRAELECTRIC NO 32018-1
FAILURE MODE-OUT OF TOLERANCE. SWITCH OPENED AT A PRESSURE LESS THAN THE REQUIRED 0.9 PLUS OR MINUS 0.3 PSID. CORROSION OF INTERNAL COMPONENTS INTERFERED WITH PRESSURE PLATE MOVEMENT, REQUIRING A SMALLER PRESSURE TO OPEN THE SWITCH.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-ECR 1080 OF MAY 31, 1962 HARD AMOOLIZED ALL INTERNAL SWITCH COMPONENTS TO ELIMINATE CORROSION.							096739
PNEUMATIC-A/B TANK PRESS	A-9L-08-3048 C BOILOFF VALVE	FAR 27-08598-3	19F 080328	W/S L.P. F.O.	YES NO	AIRESEARCH 122298-3-1	095400
FAILURE MODE-INTERNAL LEAKAGE. LEAKING THRU BUTTERFLY SEAL-AT CHECKOUT. CAUSE NOT KNOWN. VALVE NOT RECEIVED FOR ANALYSIS. LEAK COULD HAVE BEEN DUE TO BUTTERFLY POSITION ADJUSTMENT OR TO BUTTERFLY LOOSEN ON SHAFT DUE TO INSUFFICIENT SCREW TORQUE.							
CORRECTIVE ACTION-FAILURE: NOT CONFIRMED. NONE. AS A RESULT OF OTHER REJECTIONS THE VENDOR IS ADJUSTING BUTTERFLY POSITION AFTER PROOF PRESSURE FOR SERIAL NUMBERS 128 AND ON. FOR UNITS 12P AND ON VENDOR HAS CORRECTED THE TORQUING PROBLEM OF THE BUTTERFLY SHAFT SCREWS.							
PNEUMATIC-A/B TANK PRESS	A-96-08-3007F CHECK VALVE-LOW AND FUEL PRESSURE LINES	FAR 27-08114-1	20328	DYES	YES NO	MADLEY 10348-1	0864519
FAILURE MODE-INTERNAL LEAKAGE. FUEL VAPOR VENTING INTO LOX LINE CAUSED BY PARTICLES OF IRON NICKEL UP TO 650 MICRON IN SIZE EMBEDDED IN THE TEFLON SEAT. LEAK RATE WAS WITHIN ALLOWABLE LIMITS OF 10 CC/MIN AT 70 AND 3000 PSI AND AT ROOM TEMPERATURE. THIS REJECTION ALSO OCCURRED ON MAY 30, 1962.							
CORRECTIVE ACTION-CONFIRMED. BASE PERSONNEL WERE NOTIFIED OF THIS ANALYSIS. NO EVIDENCE OF CONTAMINATION WAS FOUND IN THE SYSTEM. TWR 042-043 OF JUNE 20, 1962. DESIGN CORRECTIVE ACTION WAS INITIATED BY BAR A-96-08-687 TO CHANGE CHECK VALVE. LEAKAGE RATE 0 TO 70 PSIG WAS INSTITUTED.							
PNEUMATIC-A/B TANK PRESS	A-96-08-3008F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	620324	ALTUS	YES NO	MADLEY 10528-7	086451
FAILURE MODE-FAIL TO OPERATE AT SPECIFIED TIME. VALVE DID NOT RELIEVE PER PROCEDURE 27-41086. ANALYSIS REVEALED THAT VALVE DID CRACK AT 85.9 AND RESEAT AT 95.0 PSIG WHICH ARE WITHIN DESIGN SPECIFICATION LIMITS. THE APPLICABLE SPECIFICATION AND PROCEDURAL LIMITS FOR THE VALVE ARE NOT CONSIDERED COMPATIBLE WITH EACH OTHER.							
CORRECTIVE ACTION-FAILURE: NOT CONFIRMED. INVESTIGATION REVEALED THAT THE CRACK AND RESEAT SPECIFICATIONS IN THE CHECKOUT PROCEDURES ARE COMPATIBLE. THE SPECS ARE 27-68104 DESIGN SPEC, E.O.P. 410-81, AND 27-41086 VALIDATION PROCEDURE. SINCE ALL OPERATIONAL TESTS HAVE BEEN TURNED OVER TO AIR FORCE THE PROCEDURE 27-41086 IS NO LONGER USED.							
PNEUMATIC-A/B TANK PRESS	A-96-08-3041F PRESSURE REGULATOR, LIQUID OXYGEN	FAR 27-08101-33	880322	ALTUS	NO NO	FLUIDGENICS P-638-1	
FAILURE MODE-NONE. DURING A MAPCHE RUN. BLOW BLEED DOWN AT CARD 119 OF PROCEDURE 27-98401 THOUGHT TO BE PROBLEM. THIS CAN OCCUR WITH A NORMAL SYSTEM.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	DATE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NOT CONFIRMED. THE SOP 31-38 OF 28 OCT. 1982 DEM TO ALL P SITES NOT YET SOLD STATING THAT AT CAR 5 119 OF 27-98401 THE SYSTEM SHOULD NOT BE CONSIDERED DEFECTIVE IF THE GREEN LIGHT DOES NOT GO ON WITHIN A SHORT PER 100 OF TIME. FIVE MINUTES WOULD NOT BE ABNORMAL FOR SYSTEM PRESSURE DECAY TO THE LEAK FILL RANGE.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3089F BOILOFF VALVE	FAR 27-80751-847	820381	WTR	NO	CALMEC NO 271-301J
FAILURE MODE-OUT OF SPECIFICATION. VALVE THOUGHT TO HAVE EXCESSIVE LEAKAGE. PERSONNEL WERE NOT AWARE OF LEAKAGE SPECIFICATION. THIS IS NOT A FAILURE.						
CORRECTIVE ACTION-NOT CONFIRMED THE 300-389 SOP OF 9/9/82 TO ALL SITES RECOMMENDED THAT ALL CALMEC BOILOFF VALVES BE TESTED FOR ALLOWABLE LEAKAGE PER REPORT 27-08898 USING FLOW TESTER 110-48/E MODEL 68004 BEFORE REJECTING VALVE FOR AUDIBLE LEAKAGE.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3089F HELIUM BOTTLE	FAR 27-08119-1	IF 820319	BYCAMORE	NO	NO
FAILURE MODE-FAIL DURING OPERATION TWO HELIUM BOTTLES REPORTEDLY WERE DAMAGED WHEN MISSILE EXPLODED. THERE WAS INSUFFICIENT DATA AVAILABLE TO DETERMINE IF BOTTLES BURST BEFORE MISSILE EXPLOSION OR IF THEY BURST AS A RESULT OF THE EXPLOSION.						
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3089F VALVE-RELIEF	FAR 27-08598-3	39F 820319	BYCAMORE	YES	AIRESEARCH NO 122298-3-1
FAILURE MODE-OUT OF SPECIFICATION. EXCESS LEAKAGE THRU THE SEAL-RATE WAS 3050 CIPM. CAUSE NOT KNOWN. POSSIBLY IMPROPER TORQUING OR ACTUATOR ADJUSTMENT BY VENDOR.						
CORRECTIVE ACTION-NOT CONFIRMED. VENDOR NOW EFFECTS BETTER TORQUING OF THE 3 BUTTERFLY CLAMPING SCREWS AND SETS THE THREE ACTUATOR ADJUSTMENT SCREWS AFTER PROOF PRESSURE TEST. REFERENCE FAR A-90-08-5089.						
PNEUMATIC-A/B TANK PRESS	A-98-08-3013F LOH TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	84F 820312	BYCAMORE	YES	S.M. MADLEY NO 101881-3
FAILURE MODE-CONTAMINATION. WATER FOUND IN VALVE AND VENT DUCT. CAUSED BY INADEQUATE COVERING OF VALVE.						

GENERAL DYNAMICS
CONVAIR DIVISION

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	T'S/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENOR NAME VENOR PART NO
CORRECTIVE ACTION-CHANGE REQUEST 3988 WAS PRESENTED TO AIR FORCE ON 820615 TO ADD A PLUG WITH A STREAMER TO PROTECT VENT DUCT. REQUEST WAS DISAPPROVED. EOP 933-18-1 REVISION J-OCT 10, 1982 AND WP3 83-01 REVISION D OF DEC 29, 1982 A DDB REQUIREMENTS FOR E AND F MISSILES. D SERIES VALVE LOCATION IS SUCH THAT WATER PROBABLY WOULD NOT ENTER VALVE.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3014F REGULATOR-LOW AIRBORNE	PAR 27-08101-33	820511	WTR	YES	FLUIDGENICS NO P838-1
FAILURE MODE-OUT OF TOLERANCE. PRESSURE VARIED FROM 21 TO 30 PSIG DURING LEAK-FILL CYCLE. ALLOWABLE RANGE IS 24.4 TO 28.5 PSIG. CAUSE ATTRIBUTED TO INDICATING TRANSDUCER LOCATED IN THE DUCT FAR REMOVED FROM THE TANK. THE GREAT DIFFERENCE IN VOLUME BETWEEN TANK AND DUCT ALLOWED A GREATER PRESSURE RANGE THAN IN THE TANK ULLAGE SPACE.						
CORRECTIVE ACTION-WTR PERSONNEL WERE NOTIFIED OF THE RESULTS OF THIS ANALYSIS, ON JULY 30, 1982.						
PNEUMATIC-A/B TANK PRESS	A-99-08-3024F BOILOFF VALVE	PAR 27-90750-811	81E 620510	FACTORY	YES NO	
FAILURE MODE-STRUCTURAL. RESEATED BELOW ALLOWABLE PRESSURE RANGE OF 2.9 TO 2.5 PSIG. CAUSED BY A REDUCTION IN BELLOWS SPRING RATE FROM METAL FATIGUE. AFTER RESEAT VALVE ALSO LEAKED PAST SEAL IN EXCESS OF MAXIMUM ALLOWABLE OF 1000 CIPM.						
CORRECTIVE ACTION-CONFIRMED LEAKAGE FOLLOWING RESEAT. TANK BS BKK 1-9-18 OF SEPT 5, 1981 TERMINATED ALL MODIFICATION S AND DEVELOPMENTS ON THE GO/A PROPOSED VALVE CHANGE AS OUTLINED IN GO/A REPORT PG 9365, DATED JULY 17, 1981. TANK AL SO ORDERED RETROFIT ON ALL OPERATION VEHICLES WITH AIRRESEARCH AND CALMEC VALVES.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3018F MANUAL SHUTOFF VALVE-SEAL	PAR 27-08108-1	84E 820501	WTR	YES	J.C. PEACOCK W NO ACHINE CO 91390
FAILURE MODE-INTERNAL LEAKAGE. VALVE LEAKED PAST THE SEAL WITH BUTTERFLY CLOSED. DAMAGE TO BUTTERFLY SEAL RESULTED FROM TOLERANCE ACCUMULATION COUPLED WITH BINDING FROM OVER TIGHTENING.						
CORRECTIVE ACTION-VALVE WAS OF ORIGINAL VENOR DESIGN AND HAD NOT BEEN MODIFIED TO INCORPORATE SUBSEQUENT DESIGN CHANGES. REFERENCE VENOR DRAWING B1806, APPROVED 810450.						
PNEUMATIC-A/B TANK PRESS	MG-99-08-894F LOW PRESSURE REGULATOR	PAR 27-08101-41	1070 820800	STR	YES	D. M. HADLEY NO
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR A LOW LEAK-FILL PRESSURE. FAILURE WAS NOT CONFIRMED.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PHI OTM	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.						
PNEUMATIC-A/B TANK PRESS	A-90-08-3083F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	64E 620427	08171	YES HYDRA ELECTRIC NO 32018-1	094320
FAILURE MODE-OUT OF TOLERANCE. ACTUATED AT 0.55 PSID DURING CHECKOUT. ALLOWABLE LIMITS ARE 0.9 PLUS OR MINUS 0.3 PSID.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION. ACTION RESULTING FROM PREVIOUS FAILURES INCLUDE DESTROYING ACTION IN PROGRESS TO HARD ARMORIZE SWITCH, INTERNAL COMPONENTS, AND TO INCREASE THE REQUIRED DIFFERENTIAL BETWEEN THE TANKS. THESE CHANGES WILL BE INCORPORATED IN THE 27-08130-5 CONFIGURATION.						
PNEUMATIC-A/B TANK PRESS	A-9L-08-298F LOX TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	54F 620427	LINCOLN	YES B.M. MADLEY NO	094322
FAILURE MODE-CONTAMINATION. TWO UNITS REJECTED FOR FAILURE TO CRACK 2.5 PSID INSTEAD OF TO 5 PSID.						
CORRECTIVE ACTION-CHANGE REQUEST 3508 WAS SUBMITTED PROPOSING A VENT PLUG AND DRAINER TO PREVENT RAIN WATER FROM ENTERING THE SYSTEM. THE PROPOSAL WAS REJECTED BY THE CUSTOMER AND DIRECTED GO/C TO USE TAPE.						
PNEUMATIC-A/B TANK PRESS	A-9N-08-3016F PRESSURE REGULATOR-LOX TANK	FAR 27-08101-33	61F 620426	ALTUS	YES FLUIDGENICS NO P036-1	094335
FAILURE MODE-OUT OF TOLERANCE. HIGH TEST VALUE ON CARDS 120 AND 121 OF PROCEDURE 27-984401. CAUSE UNKNOWN. THE REGULATOR PASSED A MAPCHE TEST AT 50A WHICH SIMULATED SITE CONDITIONS. LOWER ALLOWABLE DESIGN LIMIT FOR THE BOTTOM OF LEAK-FILL WAS EXCEEDED. DISASSEMBLY DID NOT REVEAL ANY DISCREPANCIES.						
CORRECTIVE ACTION-A SURVEILLANCE WILL BE MAINTAINED OVER FACTORY AND SITE TESTS OF SIMILAR TYPE REGULATORS AS OF JULY 19, 1962.						
PNEUMATIC-A/B TANK PRESS	A-9S-0352/42-401-A1-59 LOX TANK PRESSURIZATION REGULATOR	CAPTIVE 27-08101-33	59F 620424	9-2	YES FLUIDGENICS NO	094335
FAILURE MODE-LEAK-INTERNAL. THE REGULATOR DID NOT LOCK CLOSE ABOVE 28 PSIG TANK PRESSURE AT CHANGEOVER TO INTERNAL PNEUMATICS. THE REGULATOR LEAKED 64B, AS INDICATED BY A PRESSURE SPIKE IN LOX TANK AND DUCT PRESSURE.						
SYSTEM EFFECT-THE LOX TANK WAS OVER-PRESSURIZED TO 30.2 PSIG AT CHANGEOVER TO INTERNAL PNEUMATICS, INDICATING FAILURE OF THE REGULATOR. OPERATION OF THE REGULATOR WAS SATISFACTORY DURING LEAK FILL OPERATIONS AND DURING THE FIRING.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PHI OTH	VENDOR NAME VENDOR PART NO
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE REGULATOR WAS SUBSEQUENTLY REPLACED.						
PNEUMATIC-A/B TANK PRESS	A-88-08-3008F PRESSURE REGULATOR-LOX TANK PRESSURE RE/POCKET	FAR PRESSURE 27-08101-33	50V 820424	SYCAMORE	YES FLUIDGENICS NO P836-1	
FAILURE MODE-OUT OF TOLERANCE. MOMENTARY PRESSURE SPIKE OF 30.5 PSIG AT CHANGE OVER TO INTERNAL. A SPIKE OF 32 TO 33 PSIG OCCURRED THE NEXT DAY. CAUSE ATTRIBUTED TO MOMENTARY POPPET HANG UP UNTIL JARRED LOOSE BY VALVE ACTION. POPPET WAS CALLED, PROBABLY DUE TO IMPROPER APPLICATION OF DRY FILM LUBRICANT.						
CORRECTIVE ACTION-VENDOR REVIEWED PROCEDURES FOR ALIGNMENT OF STOP VALVE NUT AND FOUND THEM ADEQUATE. THE DRY FILM LUBRICANT PROCESS WAS FOUND ADEQUATE. EFFECTIVE AUG 9, 1982 A REQUIREMENT WAS ADDED FOR A SMOOTHLY BLENDED RADIUS ON THE A-103 NUT AND THE A-1131 INSERT.						
PNEUMATIC-A/B TANK PRESS	A-88-3001F TORQUEAL-BOLLOFF VALVE TO VENT ELB OW	FAR ELB 65-07900-239	820404	SYCAMORE	YES ADVANCED PRODU NO CTS U-2420-07379-N PM	
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE WAS DETECTED BETWEEN MATING FLANGES AND THE SEAL. CAUSED BY ATTACHING BOLTS BOTTOMING OUT IN THE VALVE AND NOT SQUEEZING SEAL SUFFICIENTLY.						
CORRECTIVE ACTION-NO CORRECTIVE ACTION. SINCE ONLY THE TORQUEAL WAS RECEIVED FOR ANALYSIS, NO OTHER ACTION IS APPLIED.						
PNEUMATIC-A/B TANK PRESS	A-88-08-3002 REGULATOR-LIQUID OXYGEN	FAR 27-08101-33	820403	CTS	YES FLUIDGENICS NO P836-1	
FAILURE MODE-STRUCTURAL. SUSPECTED A PROBLEM WITH THE TEFLON GUIDE. THE GUIDE WAS FOUND TO BE FRACTURED AT FLANGE 1 O BODY JUNCTION DUE TO ACCUMULATION OF TOLERANCES ALLOWING INSUFFICIENT AREA FOR TRAPPED GAS TO ESCAPE.						
CORRECTIVE ACTION-TELEGRAM BUREAU 27-4-208 OF APRIL 21, 1988, AUTHORIZED THE RETROFIT OF SIMILAR TYPE REGULATORS NOW IN USE WITH REGULATORS OF AN IMPROVED DESIGN. THE NEW GUIDE WILL INCLUDE 8 TO 4 HOLES TO INCREASE ESCAPE AREA FOR TRAPPED GAS.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	DAS80/01-SMO-04-18 SWITCH	COMPOSITE-PRO/DPL	12P	D	YES NO	904317
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. MISSILE FAILED TO ACHIEVE FLIGHT PRESSURE DUE TO A MICROSWITCH NOT MATING.						
SYSTEM EFFECT-OPERATION TOO LOW. PCU FAILED TO PRESSURIZE LOZ TANK TO FLIGHT PRESSURE.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-SWITCH REPLACED.						
PNEUMATIC-A/B TANK PRESS	A-88-08-200E REGULATOR-LIQUID OXYGEN	FAR 27-08101-33	420330	SYCAMORE	YES P836-1 NO	904317
FAILURE MODE-STRUCTURAL. SUSPECTED A PROBLEM WITH THE TEFLON GUIDE. THE GUIDE WAS FOUND INTACT-NO DISCREPANCIES.						
CORRECTIVE ACTION-NO FAILURE. TELEGRAM 8384K 27-4-206 OF APRIL 21, 1962 AUTHORIZED THE RETROFIT OF SIMILAR TYPE REG ULATORS NOW IN USE WITH REGULATORS OF AN IMPROVED DESIGN. THE NEW GUIDE WILL INCLUDE 2 TO 4 HOLES TO INCREASE ESCAPE AREA FOR TRAPPED GAS.						
PNEUMATIC-A/B TANK PRESS	A-88-08-287F FUEL TANK PRESSURE REGULATOR	FAR 27-08102-23	903330	SYCAMORE	YES FLUIDDYNAMICS NO	904321
FAILURE MODE-OUT OF TOLERANCE. THREE UNITS WERE REJECTED FOR A SUSPECTED DEFICIENCY IN THE TEFLON GUIDE. SUSPECTED PROBLEM NOT CONFIRMED.						
CORRECTIVE ACTION-27-08102-23 REGULATORS TO BE REPLACED WITH AN IMPROVED DESIGN.						
PNEUMATIC-A/B TANK PRESS	A-88-08-296F PRESSURE TRANSDUCER	FAR 27-08109-1	1100 903318	WTR	YES CRESCENT ENGR. NO 88-5001	904323
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR OPERATING UP TO 2.5 PSID INSTEAD OF TO 5 PSID.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	CT-98-08-013P FUEL TANK PRESSURE-RELIEF VALVE	PAR E7-08104-3	104D 820300	ETR	YES NO	B.M. MADLEY NO 10920-3	090809
FAILURE MODE-EXTERNAL LEAKAGE. PRESSURE DROP FROM 13.8 TO 8 PSIG WITHIN 80 MINUTES.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. GO/C TO START SURVEILLANCE TO IDENTIFY CONDITIONS TO CAUSE A SIMILAR TYPE LEAK.							
PNEUMATIC-A/B TANK PRESS	AE82-0078/01-304-00-06 BOIL OFF VALVE	FLIGHT	942 820220	0817-1 0.8	NO NO		090010
FAILURE MODE-PREATURE OPERATION-THE BOILOFF VALVE WAS ACTIVATED WHEN ELECTRICAL UNUSUAL EFFECT OCCURRED, GENERATE D BY LAUNCH CONTROL. CAUSED A BOILOFF VALVE ON AUTOMATIC SIGNAL TO BE GENERATED, PLACING THE BOILOFF VALVE IN CONTR O.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY-LOW TANK PRESSURE WAS VENTED TO 4.8 PSIG AT 2.0 SEC. BY 75 SEC IT REACHED 10. 2 PSIG. BY 125 SEC IT REACHED 16.0 PSIG. AT 294 SEC PRESSURE WAS 3.3 PSIG. THIS ALSO RESULTED IN A DECAT IN FUEL TAN K PRESSURE AND PREMATURE HELIUM DEPLETION IN TANKS PRESS SYSTEM.							
VEHICLE EFFECT-NONE AS A RESULT OF THIS FAILURE.							
CORRECTIVE ACTION-CHANGED LAUNCH CONTROL LOGIC.							
PNEUMATIC-A/B TANK PRESS	A-98-08-304TF PRESSURE REGULATOR-FUEL TANK	PAR E7-08102-23	70F 820223	DYES8	NO YES	FLUIDGENICS P337-1	091070
FAILURE MODE- OUT OF TOLERANCE. PRESSURE 0.7 HIGHER THAN 60.01 TO 63.21 PSIG ALLOWABLE DURING CRAD 109 OF MARCHE PR OCEDURE 27-98401. CAUSED BY AN EMATIC CONTROLLER. THE A117 AND A115 GUIDES WERE OUT OF TOLERANCE, PREVENTING PROPER CLEARANCE FOR THE POPPET.							
CORRECTIVE ACTION- VENDOR REPLIED TO PAR A-98-08-30404 ON DEC 12, 1962. SAYING THAT HOLE DIAMETERS ARE 100 PER CENT CHECKED IN FINAL MACHINING WITH SMALL HOLE SAGES. CHECKED WITH CALIBRATED MICROMETERS. ALSO EACH HOLE IS BURNISHED W ITH A PLUG GAGE.							
PNEUMATIC-A/B TANK PRESS	DA678/08-080-17-03	COMPOSITE-PRD/DM	3P 820323	8	YES NO		
FAILURE MODE-OUT OF SPECIFICATION. MISSILE TANK PRESSURES WERE MARGINAL.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SIZE TIME DIP	PRJ OTM	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-UNKNOWN.							998350
PNEUMATIC-A/B TANK PRESS	A68-0193/BE-401-00-137 HELIUM CHANGEOVER VALVE	COUNTDOWN	1370 880215	92	YES NO		998104
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. HELIUM CHANGEOVER VALVE FAILED TO TRANSFER TANK PRESSURIZATION TO INTERNAL AND COMBIT STOP WAS INITIATED.							
SYSTEM EFFECT-OPERATION DOES NOT START.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-VALVE REPLACED.							
PNEUMATIC-A/B TANK PRESS	A-90-04-233F LOX TANK PRESSURE RELIEF VALVE, SC 27-08103-3 REV	FAR	880208	WTR	YES B. M. MADLEY NO		998319
FAILURE MODE-EXTERNAL LEAK. UNIT REJECTED FOR FAILURE TO HOLD PRESSURE ABOVE 15 PSIG. THE SECONDARY CONTROLLER DOME PRESSURE POPPET GUIDE WAS UNSCREWED FROM THE POPPET, ALLOWING GAS TO LEAK PAST THE DIAPHRAGM AND OUT THE VENT. THIS CAUSED RELIEVING AT LOW PRESSURE.							
CORRECTIVE ACTION-VENDOR INCLUDED A STAKING OPERATION IN THE ASSEMBLY PROCEDURE, FOR THE SCREW, TO PREVENT RECURRENT.							
PNEUMATIC-A/B TANK PRESS	A6-98-08-3004F DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	1330 880203	12	YES HYDRA ELECTRIC NO	38018-1	998841
FAILURE MODE-STRUCTURAL. ELECTRICAL RECEPTACLE FOUND BROKEN FROM THE CAME AT THE SOLDERED JOINT. CAUSED BY POOR JOINT DESIGN AND INTERIOR SOLDERING TECHNIQUES.							
CORRECTIVE ACTION-CONFIRMED. MEMO P375-8/59, IN REPLY TO BAR A6-98-08-899, STATED THAT THE 27-08130-1 WILL BE REPLACED BY 27-08130-5 PER ECP 1920 FOR E AND F OPERATIONAL MISSILES. ECP 7600 WAS APPROVED BY AIR FORCE AS A DESIGN DEFICIENCY NO COST CHANGE. ON MAY 26, 1964 50/A OFFERED A REBUTTAL PROTECTING AIR FORCE POSITION. AUTHORIZATION TO PROCEED WAS NOT RECEIVED.							
PNEUMATIC-A/B TANK PRESS	A-98-08-294F SOIL-OFF VALVE SUPPORT RETAINER NU 7-79881-7	FAR	880181	11	COMPLEX YES CALNEC NO		
FAILURE MODE-CONTAMINATION. THE NUT WAS REJECTED WHEN IT BECAME IMPOSSIBLE TO TURN DURING INSTALLATION. FAILURE CONSIDERED THE RESULT OF A METALLIC OBJECT IN THE THREADS OF THE NUT OR THE MATING PART.							

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DIPPLICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI VENDOR PART NO	VENDOR NAME
CORRECTIVE ACTION-60/C INFORMED ETR THAT THE PARTS ARE GOOD, AND, THAT THE PROBLEM WAS CONTAMINATION.						
PNEUMATIC-A/B TANK PRESS	A482-0074/P1-60N-01-07 BOILOFF VALVE	COMPOSITE-FRD/DPL 27-04596-3	77 620124	11	YES NO	AIRESEARCH NO 182278-8-1
FAILURE MODE-OUT OF TOLERANCE. BOILOFF VALVE CRACKING PRESSURE WAS EXCEEDING NORMAL PRESSURES DURING TANKING TESTS.						
SYSTEM EFFECT-ERRATIC OPERATION. CRACKING PRESSURE VARIED FROM 5.2 PSIG TO 7.0 PSIG.						
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. LOX TANKING COULD NOT BE COMPLETED AND DPL HAD TO BE RESCHEDULED.						
CORRECTIVE ACTION-BOILOFF VALVE WAS REMOVED AND REPLACED. (PAR-98-08-293)						
PNEUMATIC-A/B TANK PRESS	A682-007NAB2-401-00-123 BOIL-OFF VALVE	COUNTDOWN	123D 620117	B2	YES NO	
FAILURE MODE-OUT OF TOLERANCE. LOW LOX TANK PRESSURE CAUSED BY LOW BOILOFF VALVE RESEAT PRESSURE.						
SYSTEM EFFECT-OPERATION TOO LOW. LOW LOX TANK PRESSURE SWITCHED PCU TO EMERGENCY. THIS STOPPED AUTOMATIC PRESSURIZA TION CONTROL OF LOX TANK PRESSURE AFTER APPROX. 5 MINUTES PCU WAS SWITCHED BACK TO AUTOMATIC.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B TANK PRESS	A061-0349/OA850/L2-4NO-01-11- ORIFICE	COMPOSITE-FRD/DPL	114D 611216	1-2	YES NO	
FAILURE MODE-OUT OF SPECIFICATION. PROGRAMMED PRESSURE ORIFICE OUT OF SPECIFICATION.						
SYSTEM EFFECT-OPERATION TOO HIGH. AT PRESSURE TRANSFER TO INTERNAL, LOX TANK PRESSURIZED TO 27.8 PSIG.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-CHANGE ORIFICE.						
PNEUMATIC-A/B TANK PRESS	A-90-08-279F BOIL-OFF VALVE	PAR 27-80780-11	64C 611211	OUTP-1	YES NO	60/C
FAILURE MODE-INTERNAL LEAK. UNIT REJECTED FOR AN AUDIBLE LEAK. LEAKAGE NOT CONFIRMED.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRJ OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE-LEAKAGE NOT CONFIRMED.						
PNEUMATIC-A/B TANK PRESS	A-90-08-299F FUEL TANK PRESSURE TRANSDUCER BEAR 27-01243-7 ING	FAR	04E 011209	04TF 1	YES BOURN NO	094638
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR BEING OUT OF SPECIFIED CALIBRATION LIMITS. THE PROBLEM WAS CAUSED BY WORN WIPER SUPPORT BEARINGS AS RESULT OF SOFT BEARING MATERIAL.						
CORRECTIVE ACTION-VENDOR WOULD TAKE NO ACTION UNTIL FAILED TRANSDUCER WAS RECEIVED. GO/C SCRAPPED THE UNIT AFTER FAILURE ANALYSIS.						
PNEUMATIC-A/B TANK PRESS	A-9L-08-299F MELIUM STAGING DISCONNECT	FAR 27-08122-3	19F 011201	LINCOLN	YES B. M. MADLEY NO	094640
FAILURE MODE-LEAK-EXTERNAL. UNIT WAS REJECTED FOR LEAKAGE IN MATED AND DEMATED CONDITION. LEAKAGE WAS NOT CONFIRMED.						
CORRECTIVE ACTION-GO/C/INSTRUCTED FIELD PERSONNEL NOT TO DISASSEMBLE OR ADJUST FAILED ITEMS PRIOR TO RETURN FOR FAILURE ANALYSIS.						
PNEUMATIC-A/B TANK PRESS	A-9M-08-299F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	17F 011130	SCHILLIN 6	YES B. M. MADLEY NO	094630
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR RELIEVING 97.5 PSIG AND INABILITY TO RESET TO 99.75 PSIG. AS RECEIVED, THE VALVE WOULD NOT CRACK UP TO 75 PSIG. READJUSTING TO ORIGINAL SETTINGS, TO MATCH TORQUE PAINT, BROUGHT CRACK AND RESET PRESSURES WITHIN LIMITS. FAILURE NOT CONSIDERED CONFIRMED.						
CORRECTIVE ACTION-APPROPRIATE ACTION TAKEN TO PREVENT READJUSTMENTS IN THE FIELD.						
PNEUMATIC-A/B TANK PRESS	A-99-08-299F STAGING DISCONNECT-NEAL	FAR 27-08122-3	011117	FACTORY	YES B. M. MADLEY NO	094640
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE DURING SYSTEM CHECKOUT. LEAKAGE WAS CAUSED BY A STIFF PNEUMED REL-P SEAL AS RESULT OF A CRYSTALLINE STRUCTURE IN THE SEAL.						
CORRECTIVE ACTION-GO/C AND VENDOR ARE WORKING TO PRODUCE A MORE AMORPHOUS REL-P PART.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-90-08-288F HELIUM CHANGE-OVER VALVE-MOTOR	FAR 27-08110-11	24E 611117	WTR	YES NO	ROBERTSMAN FAR TON	894844
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FAILURE TO OPERATE. THE MOTOR COMMUTATOR BRUSHES WERE ROUGH AND P ITTED-AND, THE COMMUTATOR PARTIALLY BLACKEHED-TWO WINDINGS OF THE ARMATURE WERE SHORTED-AND A TAIRED WINDING WAS SHORTEH.							
CORRECTIVE ACTION-NONE-CAUSE COULD NOT BE DETERMINED.							
PNEUMATIC-A/B TANK PRESS	D433/02-68H-02-03 BOIL OFF VALVE	COMPOSITE-FRD/DPL	3F 611113	6	YES NO	AIRRESEARCH	897629
FAILURE MODE-FAIL DURING OPERATION. ULLAGE PRESSURE TRANSIENTS OBSERVED AFTER LOE(LMB) FINE LOAD COMPLETE. BELIEVED DUE TO THE VALVE BUTTERFLY STICKING IN THE CLOSED POSITION.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	A-90-08-291F LOX TANK PRESSURE RELIEF VALVE P18 27-06103-3 TON	FAR 27-06103-3	1220 611113	FACTORY	YES NO	B. M. MADLEY	894847
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR FAILURE TO RELIEVE DURING CHECKOUT. THE PRIMARY CONTROLLER PISTON WAS ON EASIZE, CAUSING AN INTERFERENCE PIT BETWEEN THE PISTON AND SPRING. A PARTICLE OF GLYPOL WAS FOUND UNDER THE PRIMARY DIAPHRAGM BEAD.							
CORRECTIVE ACTION-VENDOR CHECKED ALL PISTONS IN STOCK AND INCREASED THEIR INSPECTION SURVEILLANCE.							
PNEUMATIC-A/B TANK PRESS	D4328/11-4NO-01-108 ORIFICE	COMPOSITE-FRD/DPL	1080 611114	1-1	YES NO		881739
FAILURE MODE-OUT OF SPECIFICATION. MISSILE LOX TANK PRESSURE RAISED ABOVE REDLINE.							
SYSTEM EFFECT-OPERATION TOO HIGH. LOW A/B REGULATOR FALSE SENSING PRESSURE WAS LOW DUE TO ORIFICE NOT FLOWING ENOUGH HELIUM. LOW PRESSURE RESULTED IN REGULATOR BEING BELOW LOCKOUT AT TRANSFER TO INTERNAL WHICH RESULTED IN A LEAK FIL L ABOVE REDLINE.							
VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-ORIFICE REPLACED.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OPTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	2P-90-08-287F PROGRAMMED PRESSURE ORIFICE	FAR 08-29901-001	100C 611114	PALCI	YES NO	YES NO
<p>FAILURE MODE-CONTAMINATION-THE UNIT WAS FAILURE ANALYSED TO ISOLATE THE CONTAMINANT AND DETERMINE ITS SOURCE. THE C ONTAMINANTS WERE DETERMINED TO BE TRACES OF COPPER, TITANIUM AND HYDROCARBONS. THE SOURCE COULD NOT BE DETERMINED.</p> <p>CORRECTIVE ACTION-ALL VEHICLES DO NOT REQUIRE THIS SYSTEM.</p>						
PNEUMATIC-A/B TANK PRESS	0A623 BOTTLE, STORAGE	COMPOSITE-PRD/DPL	24E 611107	7	NO YES	NO YES
<p>FAILURE MODE-OUT OF TOLERANCE. HE BOTTLE TEMP WAS LATE COMING INTO REDLINE LOWER THAN NORMAL LINE FLOW RATE.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED.</p> <p>CORRECTIVE ACTION-CONTROLLER RESET.</p>						
PNEUMATIC-A/B TANK PRESS	A-9F-08-284F LOW TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	611102	WARREN	NO NO	NO NO
<p>FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR ALLOWING TANK PRESSURE TO INCREASE TO 30 PSIG AT CHANGE OVER TO IM TERNAL PRESSURE. THE ADJUSTMENT OF THE PRIMARY CONTROLLER HAD BEEN TAMPERED WITH, THE TORQUE PAINT WAS BROKEN. FAILU RE NOT CONFIRMED. THE PROBLEM WAS CAUSED BY A NORMAL LOW SLUING OPERATION.</p> <p>CORRECTIVE ACTION-NONE-THE RESULT OF A STUDY INDICATED THE EFFECTS OF PRESSURE OSCILLATIONS, DUE TO THE SLUING OF ERATIONS, IS NOT HARMFUL TO THE PNEUMATICS SYSTEM.</p>						
PNEUMATIC-A/B TANK PRESS	A-90-08-289F LOW TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	24E 611087	WTR	NO NO	NO NO
<p>FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED AS THE CAUSE OF A MAPCHE NO-GO ON CARD 49 OF DECK 250. CRACK AND RE SEAT PRESSURES WERE WITHIN LIMITS, THOUGH CRACKING PRESSURE WASSET NEAR THE HIGH SIDE OF THE ALLOWABLE BAND.</p> <p>CORRECTIVE ACTION-NONE-THE PROB' IN WAS CONSIDERED THE CAUSE OF READOUT EQUIPMENT TOLERANCE BUILDUP.</p>						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	A-9F-08-882F LOR TANK PRESSURE REGULATOR	FAR 27-08101-23	51E 011023	WARREN	YES NO	YES FLUIDGENICS
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR ALLOWING TANK PRESSURE TO INCREASE SUFFICIENTLY TO REPEATEDLY CYCLE THE RELIEF VALVE, AFTER SWITCHING TO INTERNAL PRESSURE. FAILURE WAS NOT CONFIRMED. ONE SIMILAR CASE REPORTED IN PAR A-9F-08-883.						
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.						
PNEUMATIC-A/B TANK PRESS	A-08-08-898F BOIL-OFF VALVE SEAL	FAR 27-03396-5	4P 011023	ETR	YES NO	YES AIRSEARCH
FAILURE MODE-OUT OF TOLERANCE. TWO UNITS FAILED IN THE CLOSING MODE DURING TANKING. THE CLOSING TIME INCREASED FROM 2 SECONDS TO 10-12 SECONDS, AS THE ULLAGE SPACE DECREASED. FOUR OTHER VALVES HAVE FAILED IN THE SAME MANNER. NO FAILURE ANALYSIS PERFORMED BY GD/C, SAN DIEGO, SINCE THEY WERE DEVELOPMENTAL PARTS.						
CORRECTIVE ACTION-FAILURE CONSIDERED DUE TO THE DIFFERENCE IN COEFFICIENTS OF EXPANSION BETWEEN THE REL-F LIP SEAL AND THE TEFLON DUCT SLEEVE. A DESIGN CHANGE WAS CONSIDERED.						
PNEUMATIC-A/B TANK PRESS	HK-99-04-3033-F FLOW VALVE ORIFICE	FAR 27-11014-3	011012	FACTORY	YES NO	YES LEONARD NO 108-0789
FAILURE MODE-OUT OF TOLERANCE. DURING FACTORY CHECKOUT THE CONSTANT FLOW VALVE FLOW RATE WAS 12.9 SCFM. SPEC IS 13 TO 15 SCFM. CONTAMINATION WAS FOUND IN THE ORIFICE AREA. THE METALLIC CONTAMINATION PROBABLY PROPAGATED FROM THE INTERNAL 20 MICRON FILTER.						
CORRECTIVE ACTION-THE CLEANING PROCEDURE FOR THE FILTER WAS REVISED AS DELINEATED ON VENDOR DRAWING 188660.						
PNEUMATIC-A/B TANK PRESS	DAB18/01-9MO-10-24 TOPPING LINE CHECK VALVE	COMPOSITE-PROD/PL 24E 011011	24E 011011	F	YES NO	YES NO
FAILURE MODE-EXTERNAL LEAK. LOR TANK PRESSURE DROPPED DUE TO LEAKAGE THROUGH THE TOPPING LINE CHECK VALVE.						
SYSTEM EFFECT-OPERATION TOO LOW. EXTERNAL LEAK THROUGH THE TOPPING LINE CHECK VALVE CAUSED THE LOR TANK PRESSURE TO DROP.						
VISIBLE EFFECT-NONE.						
CORRECTIVE ACTION-CHECK VALVE REPLACED.						

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PNEUMATIC-A/B TANK PRESS	A-1A-08-281F HELIUM SUPPLY LINE CHECK VALVE-POP PET	FAR 27-08114-1	810929	FACTORY	YES B.M. MADLEY NO		884633
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR CONTAMINATION OF THE POPPET. NO CORROSION WAS FOUND, HOWEVER IT WAS W ORN APPARENTLY THE RESULT OF FOREIGN PARTICLES.							
CORRECTIVE ACTION-ROCKETDNE HAD PREVIOUSLY MADE QUALITY CONTROL IMPROVEMENTS TO ELIMINATE CONTAMINANTS ORIGINATING IN THE HEAT EXCHANGER.							
PNEUMATIC-A/B TANK PRESS	RA-98-08-281F LOX TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	117D 810928	ETR	YES B.M. MADLEY NO		887948
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR NOT RELIEVING IN REQUIRED PRESSURE RANGE. SITE PERSONNEL ATTEMPTED ADJUSTMENT WITHOUT SUCCESS. DURING TEST, IN AS RECEIVED CONDITION, CRACKING PRESSURE WAS LOW-THE VALVE WAS ADJUSTED AND OPERATED PROPERLY. THE VALVE WAS NORMAL ON DISASSEMBLY. IT IS CONCLUDED THE VALVE WAS NOT THE CAUSE OF THE PROB LEM.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	9F-08-280F LOX TANK PRESSURE REGULATOR	FAR 27-08101-17	43E 810927	WAFB	NO B.M. MADLEY NO		887272
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. UNIT REJECTED FOR A MARCHE NO-50 FOR CARDS 58, 59 AND 60 FOR NOT RE GULATING PRESSURE BELOW UPPER LIMIT. FAILURE OF REGULATOR WAS NOT CONFIRMED. IT WAS CONCLUDED THAT LOX TANK PRESSURE WAS TOO HIGH AT THE BEGINNING OF CARD 59.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	9F-08-284F SENSING LINE SHUTOFF VALVE	FAR 27-08144-5	810927	WAFB	YES CHAMBER NO		887288
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE WHEN THE GROUND HALF WAS CONNECTED. LEAKAGE WAS THE RESULT OF THE VALVE BEING ASSEMBLED BACKWARDS WHICH WOULD NOT PERMIT PRESSURE TO REACH THE REGULATOR.							
CORRECTIVE ACTION-ALL UNITS IN STOCK, INSTALLED, AND AT OFFSITE SITES WERE CHECKED. VENDOR IS USING A TEST FIXTURE TO OVERCOME THIS PROBLEM.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE	PRI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-9F-08-273F MELIUM CHANGEOVER VALVE-GEARS	FAR 27-08118-11	9F 810117	WARREN	YES NO	ROBERTSHAW FUL TON	094641
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR OPERATING ERRATICALLY AND SLOWLY, THEN COMPLETE FAILURE. UPON DISASSEMBLY THE O-RING WAS PINCHED BETWEEN THE REL-F SEAT AND THE METAL PORTION OF THE PORT-THE GEAR TRAIN WAS BINDING IN ONE SPOT.							
CORRECTIVE ACTION-VENDOR PERSONNEL WERE MADE AWARE OF PROBLEM AND INSTRUCTED TO USE EXTREME CARE DURING ASSEMBLY. Y HE-13 VALVE, INCORPORATING A PLANETARY GEAR TRAIN WAS AUTHORIZED FOR THE BLY PROGRAM.							
PNEUMATIC-A/B TANK PRESS	A-9B-08-249F LOX PRESSURIZATION DUCT	FAR 7-73313-913	810923	13	NO NO	60/C	097274
FAILURE MODE-CONTAMINATION-CORROSION CONCENTRATION AT THE BEND RADIUS WAS NOTED. THE DUCT WAS APPROVED FOR FLIGHT B Y EYE DESIGN. CORROSION WAS RESULT OF THIS AREA BEING MISSED DURING THE CLEANING PORTION OF MP461.11.							
CORRECTIVE ACTION-COGNIZANT PERSONNEL WERE ALERTED TO PROBLEM.							
PNEUMATIC-A/B TANK PRESS	A-9F-08-257F MELIUM CHANGEOVER VALVE SEAL	FAR 27-08118-11	810913	WAFB	NO YES	ROBERTSHAW FUL TON 1090-22001	097273
FAILURE MODE-LEAK-INTERNAL. UNIT REJECTED FOR INTERNAL LEAKAGE IN THE CLOSED POSITION. LEAKAGE COULD NOT BE CONFIRMED. HOWEVER, IT WAS CONCLUDED THAT PARTICLE OF CONTAMINANT MAY HAVE ADHERED TO THE POPPET SEAL, CAUSING THE LEAK, AND HAD BEEN SUBSEQUENTLY DISPLACED.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	A-9B-08-258F MELIUM CHANGEOVER VALVE	FAR 27-08118-11	810913	IF 810913	NO NO	ROBERTSHAW FUL TON	097271
FAILURE MODE-ERRATIC OPERATION-UNIT REJECTED FOR ERRATIC OPERATION. REPORTED PROBLEM COULD NOT BE CONFIRMED. HOWEVER, THE TWO TEFLON THRUST RINGS WERE MISSING. IT WAS CONCLUDED THE REPORTED PROBLEM WAS THE RESULT OF APPLICATION OF INADEQUATE VOLTAGE.							
CORRECTIVE ACTION-VENDOR WAS REQUESTED TO TIGHTEN UP HIS QUALITY CONTROL TO PREVENT RECURRENCE OF THE MISSING THRUST RINGS.							

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PNEUMATIC-A/B TANK PRESS	A-88-08-277F HELIUM CHANGE-OVER VALVE MOTOR	FAR 27-08111-11	IF 810912	SYCAMORE	YES	ROBERTSHAW PUL NO TOM	894843
FAILURE MODE-CONTAMINATION-UNIT REJECTED FOR SLOW AND ERRATIC OPERATION BECAUSE ALL MOTOR AREAS AND PARTS WERE BADLY CORRODED AND WERE DAMN.							
CORRECTIVE ACTION-PROBLEM IS PECULIAR TO SYCAMORE, WHERE WATER IS SPRAYED ON THRUST SECTION AFTER A STATIC FIRING--USUALLY THIS VEHICLE WOULD BE IN FLIGHT. THESE CONDITIONS ARE BEYOND DESIGN REQUIREMENTS. THIS INCIDENT OCCURRED AFTER PROTECTIVE COVERS WERE INSTALLED.							
PNEUMATIC-A/B TANK PRESS	A-94-08-288F FUEL TANK PRESSURE REGULATOR	FAR 27-90400-813	50E 810907	SCHILLER	YES	STRATOS NO	897970
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR A LOW TANK PRESSURE NO-66 ON CARDS 19 AND 22. REGULATOR FAILURE WAS NOT CONFIRMED.							
CORRECTIVE ACTION-E SERIES MAPCHE PROCEDURES REVISED TO CHECK TRANSDUCER 48 BEFORE REMOVING THE REGULATOR.							
PNEUMATIC-A/B TANK PRESS	UP-90-08-288F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	10SD 810901	WTR	NO	B.H. MADLEY NO	897968
FAILURE MODE-LEAK-EXTERNAL-UNIT REJECTED FOR EXTERNAL LEAKAGE. LEAKAGE WAS WITHIN SPECIFICATION LIMITS.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	AL-61-0086/82-801-AS-03 LOX TANK PRESSURE REGULATOR	CAPTIVE	5C 810828	SE	YES	NO	899343
FAILURE MODE-ERRATIC OPERATION LOX TANK PRESSURE OSCILLATIONS, TYPICAL OF PREVIOUS TEST EMPLOYING P AND C REGULATOR 8 WERE PRESENT DURING AIRBORNE PNEUMATIC CONTROL.							
SYSTEM EFFECT-ERRATIC OPERATION OSCILLATIONS OF 0.8 CPG IN LOX REGULATOR DISCHARGE PRESSURE FROM 9 SECONDS AFTER 81 SP TO INTERNAL CONTROL THROUGH ENGINE START.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							

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SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PAI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-9F-08-281F FUEL TANK PRESSURE REGULATOR	FAR 27-08102-19	59E 610824	WTR	YES NO	YES FLUIDGENICS	007732
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. UNIT REJECTED FOR A MAPCHE NO-60 ON CARD 17, FOR ALLOWING TANK PRESSURE TO DROP TOO LOW. FAILURE OF REGULATOR WAS NOT CONFIRMED. IT WAS CONCLUDED THE TANK PRESSURE DROP WAS THE RESULT OF NORMAL EXTERNAL BLEEDING FROM THE REGULATOR, AND PROBABLY OCCURRED WHILE DETERMINING THE CAUSE OF THE RELIEF VALVE NO-60 ON CARD 17.							
PNEUMATIC-A/B TANK PRESS	SA-9D-08-232 BOIL-OFF VALVE CONTROLLER POPPET N UT	COMPOSITE-FRD/DPL 27-80730-837	108D 610822	WTR	YES NO	YES GO/C	000076
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR FAILURE TO OPEN DURING A DPL. ANALYSIS REVEALED THE NUT, ON THE BOTTOM OF THE CONTROLLER POPPET, HAD BACKED OFF AND WAS FOUND IN THE CAVITY OF THE 27-81447-803 BODY. THIS OCCURRED FOR THE LACK OF SPECIFIED LOCKING ADHESIVE ON THE SCREW THREADS.							
CORRECTIVE ACTION-60/C INSPECTION AND ASSEMBLY PERSONNEL ALERTED TO PROBLEM. A DRAWING CHANGE WAS MADE REQUIRING A MECHANICAL LOCK FOR THE NUT, TO REDUCE HUMAN ERROR.							
PNEUMATIC-A/B TANK PRESS	A-9D-08-23/C HELIUM CHANGEOVER VALVE GEAR	FAR 27-08110-11	23E 610822	ETR	YES NO	YES ROBERTSHAW PUL NO TOM	007929
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE TO OPERATE DURING A SYSTEM TEST.							
CORRECTIVE ACTION-VENDOR REDESIGNED THE VALVE TO INCORPORATE A PLANETARY GEAR TRAIN. VALVE WILL BE IDENTIFIED AS A-19							
PNEUMATIC-A/B TANK PRESS	SA-9D-08-273F BOIL-OFF VALVE CONTROLLER	FAR 27-81448-818	108D 610822	WTR	YES NO	YES GO/C	004000
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED AS SUSPECTED CAUSE FOR A BOIL-OFF VALVE FAILING TO OPEN DURING LOW DRAIN. FAILURE OF CONTROLLER NOT CONFIRMED.							
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.							

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PNEUMATIC-A/B TANK PRESS	A-9K-08-233F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-1	ZOE 810821	FAPB	NO YES	MO B.M. MADLEY	097260
FAILURE MODE-FAIL DURING OPERATION-UNIT REJECTED AS A SUSPECTED CAUSE OF EXCESSIVE FUEL TANK PRESSURE DURING A DPL. THE UNIT EXHIBITED NO ABNORMALITIES. SEE FAR 9K-08-284F AND A-9K-08-270F AS OTHER POSSIBILITIES.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	04379/L1-4MO-02-108 BOIL OFF VALVE	COMPOSITE-PRO/DPL	1080 810821	1-1	YES NO		094036
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE BOILOFF VALVE FAILED TO OPEN AT COMMIT STOP. SYSTEM EFFECT-OPERATION DOES NOT START. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-THE BOILOFF VALVE WAS REPLACED.							
PNEUMATIC-A/B TANK PRESS	A-9K-08-284F LOX TANK PRESSURE REGULATOR	FAR 27-08101-35	ZOE 810820	FAPB	YES YES	YES FLUIDGENICS	097279
FAILURE MODE-FAIL DURING OPERATION-UNIT REJECTED AS IT WAS A SUSPECTED CAUSE OF EXCESSIVE FUEL TANK PRESSURE DURING A DPL. UNIT EXHIBITED NO ABNORMALITIES. SEE FAR A-9K-08-233F AND -270F FOR OTHER POSSIBILITIES. CORRECTIVE ACTION-REGULATOR REMOVED, OTHER ACTIONS UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	A-9K-08-270F FUEL TANK PRESSURE REGULATOR	FAR 27-08102-23	ZOE 810820	FAIRCHILD	YES NO	YES FLUIDGENICS	094639
FAILURE MODE - OUT OF TOLERANCE. UNIT REJECTED FOR ALLOWING TANK PRESSURE TO INCREASE TO 70 PSIG AFTER SWITCHING TO PNEUMATICS INTERNAL. A REGULATOR FAILURE COULD NOT BE CONFIRMED. CORRECTIVE ACTION-FAIRCHILD AFB PERSONNEL NOTIFIED OF THE RESULTS AND OF THE OTHER POSSIBLE SOURCES OF THE PROBLEM.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-94-08-289F LOW TANK PRESSURE REGULATOR	FAR 27-08101-33	34E 810817	8 5	YES NO	FLUID-GENICS	097971
FAILURE MODE - OUT OF TOLERANCE. UNIT REJECTED FOR RELIEVING AT 23 PSIG AND RESEATING AT 14.4 PSIG. FAILURE NOT CONFIRMED.							
CORRECTIVE ACTION-UNKNOWN							
PNEUMATIC-A/B TANK PRESS	B8-08-238 CHECK VALVE SEAL	FAR 27-08114-1	3E 810814	3YC.	YES NO	B.M. MADLEY	098479
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE. EXAMINATION REVEALED THAT THE SEAL HAD BEEN INSTALLED BACKWARDS. AS A RESULT SMALL PIECES OF SEAL HAD BROKEN AWAY. THIS VALVE WAS ONE OF EIGHT REMOVED BY THE GO/C PRODUCT SUPPORT DEPT.							
CORRECTIVE ACTION-ALL VALVES REMOVED BY THE PRODUCT SUPPORT CENTER WERE REINSPECTED AND RETESTED. THE PROCEDURES WERE ALSO REVISED TO PREVENT RECURRENCE.							
PNEUMATIC-A/B TANK PRESS	B4-08-282F FUEL TANK PRESSURE REGULATOR DIAPHRAGM RAGH	FAR 27-08108-13	33E 810812	FORBES	YES NO	B.M. MADLEY	097931
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR ALLOWING FUEL TANK PRESSURE TO RISE EXCESSIVELY HIGH WITH 3000 PSI INLET PRESSURE APPLIED.							
CORRECTIVE ACTION-ALL SITES WERE ADVISED TO REPLACE REGULATORS WHEN FUEL IS INADVERTENTLY INTRODUCED INTO THE REGULATOR.							
PNEUMATIC-A/B TANK PRESS	B4-08-283F FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08103-5	33E 810812	FORBES	YES YES	B.M. MADLEY	097270
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED AS A SUSPECT IN ALLOWING THE FUEL TANK PRESSURE TO RISE EXCESSIVELY HIGH. FAILURE NOT CONFIRMED. SEE FAR B4-08-282F FOR OTHER POSSIBILITY.							
CORRECTIVE ACTION-NONE.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-88-08-220F HELIUM CHANGEOVER VALVE-SEAL	FAR 27-08118-11	38E 810811	FORBES	YES NO	ROBERTSHAW VAL TOM	984842
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR THROWING THE SYSTEM INTO EMERGENCY DURING A TEST PROCEDURE. THE REL-P BE AT. AT THE OUTLET PORT, WAS LOUSED AND THE O-RING WAS PINCHED UNDER THE REL-P BEAT.							
CORRECTIVE ACTION-VENDOR PERSONNEL ARE AWARE OF THE ASSEMBLY PROBLEM, AND EXTREME CARE WILL BE EXERCISED IN THE FU TURE.							
PNEUMATIC-A/B TANK PRESS	98-08-243 DIFFERENTIAL PRESSURE TRANSDUCER	FAR 27-08109-1	80C 810809	ETR	YES NO	CRESCENT EMER. 88-5001	987288
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR LOW OUTPUT. FAILURE NOT CONFIRMED.							
PNEUMATIC-A/B TANK PRESS	9F-08-243F LOW TANK PRESSURE RELIEF VALVE	FAR 27-08109-3	51E 810803	WAFB	YES NO	B.M. MADLEY	987987
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR BEING THE CAUSE OF A NO-GO ON CARD 37. THE VALVE RECEIVED AT 10 PS IG INSTEAD OF 20 PSIG. SITE PERSONNEL ATTEMPTED TO ADJUST THE VALVE. IT WAS CONCLUDED THE VALVE WAS NOT THE CAUSE OF THE REPORTED FAILURE.							
CORRECTIVE ACTION-INSTRUCTIONS WERE ISSUED CONCERNING ADJUSTMENT OF RELIEF VALVES. MARCHE INSTRUCTIONS WERE ALTERED							
PNEUMATIC-A/B TANK PRESS	A-88-08-220F HELIUM SUPPLY LINE CHECK VALVE-SEA	FAR 27-08114-1	5C 810803	STANMORE	YES NO	B.M. MADLEY	984837
FAILURE MODE-INTERNAL LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE. THE TEFLON SEAL WAS FOUND TO CONTAIN VOIDS DUE TO I MPROPER SINTERING OF THE TEFLON PELLETS INTO A CONTINUOUS MASS.							
CORRECTIVE ACTION-NONE-THIS IS THE ONLY SUCH CAUSE OF LEAKAGE ON RECORD.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI CTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	9F-08-237F FUEL TANK REGULATOR	FAR 27-08102-7	3EC 910802	WAFB	NO	B.H. MADLEY	890079
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR A MACHS NO-60 DURING LEAKAGE-FILL CHECK. NO FAILURE-THIS UNIT IS A D SERIES REGULATOR AND FUNCTIONED PROPERLY UNDER D PRESSURES. E SERIES REQUIRES HIGHER PRESSURE RANGES.							
CORRECTIVE ACTION-WAFB INSPECTION PERSONNEL NOTIFIED AND ALL E SERIES VEHICLES UNDER GO/C CONTROL WERE CHECKED.							
PNEUMATIC-A/B TANK PRESS	AD-31-0014/14-810-34 LOX TANK REGULATOR	CAPTIVE	1-4F 910801	81-4	YES NO		892331
FAILURE MODE-ERRATIC OPERATION UNSTABLE PRESSURE							
SYSTEM EFFECT-ERRATIC OPERATION LOX TANK PRESSURE CYCLING PRESENT DURING FIRST 24 SECONDS OF TEST.							
VEHICLE EFFECT-POSSIBLE COUNTDOWN COMPOSITE ABORTED AND RESCHEDULED. LOX TANK PRESSURE OUT OF PRESSURE BAND.							
CORRECTIVE ACTION-NONE							
PNEUMATIC-A/B TANK PRESS	AD-61-0261/DA368 BOIL-OFF VALVE	COMPOSITE-FRD/DPL	11E 910731	576-C	YES NO		890725
FAILURE MODE-OUT OF TOLERANCE. FAILURE OF BOIL-OFF VALVE TO RESEAT AT PROPER VALUE.							
SYSTEM EFFECT-OPERATION TOO LOW. LOX TANK PRESSURE DROPPED TO 1.0 PSIG AFTER LOW LOAD COMPLETE.							
VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-BOIL-OFF VALVE REPLACED.							
PNEUMATIC-A/B TANK PRESS	AD-61-0013/14-808-3K LOX TANK REGULATOR	CAPTIVE	1-4F 910727	81-4	YES NO		890360
FAILURE MODE-ERRATIC OPERATION UNSTABLE PERFORMANCE							
SYSTEM EFFECT-ERRATIC OPERATION LOX TANK PRESSURE FLUCTUATED BETWEEN 22.8 AND 23.0 PSIG DURING THE FIRST 9 SECONDS. PRESSURE STABILIZED AT 24 PSIG BY 33 SECONDS. VEHICLE EFFECT - COUNTDOWN COMPOSITE ABORTED AND RESCHEDULED. LOX TANK PRESSURE OUT OF PRESSURE BAND.							
VEHICLE EFFECT - COUNTDOWN COMPOSITE ABORTED AND RESCHEDULED. LOX TANK PRESSURE OUT OF PRESSURE BAND.							
CORRECTIVE ACTION-THE 7 AND 8 REGULATOR WILL BE REPLACED, IN KIND.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI QTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-94-08-230P HELIUM CHAMBER VALVE SEAL	FAR 27-08116-11	13E 910722	FAPB	YES NO	ROBERTSON FUL TON	097270
FAILURE MODE-LEAK INTERNAL. UNIT REJECTED FOR INTERNAL LEAKAGE. SEVERE LEAKAGE WAS NOTED FROM THE OUTLET PORT. THE O-RING AT THE OUTLET PORT WAS DETEIORATED AND ADHERED TO THE PORT BENEATH THE REL-F SEAT.							
CORRECTIVE ACTION-VENDOR WILL EXERCISE EXTREME CARE IN ASSEMBLING AND TESTING EACH UNIT.							
PNEUMATIC-A/B TANK PRESS	9A-08-230 LOX TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	910721	FOAPB	NO YES	G.M. MADLEY	099060
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE, WHICH COULD NOT BE CONFIRMED. IT WAS CONCLUDED LEAK AGE CAME FROM SOME OTHER SOURCE.							
CORRECTIVE ACTION-NONE-LEAKAGE NOT CONFIRMED.							
PNEUMATIC-A/B TANK PRESS	9A-08-240 LOX TANK PRESSURE REGULATOR	FAR 27-08101	910719	ERB	NO NO	FLUIDGENICS	099028
FAILURE MODE-ERRATIC OPERATION. THE UNIT WAS REJECTED, WHILE PERFORMING TEST RUNS ON STAND 1-4 FOR OSCILLATING BETW EEN 23 TO 25 PSIG. SUBSEQUENT TESTS AT WYLE TEST LABS FAILED TO CONFIRM THE PROBLEM. IT WAS DETERMINED THAT THE DUCT FROM THE REGULATOR WAS NOT OF PROPER DIAMETER. IT WAS 2 1/2 INCHES. ALTHOUGH A REPLACEMENT REGULA TOR DID NOT OSCILLATE, SLIGHT INTERNAL DIFFERENCES IN ADJUSTMENT MAY CAUSE ANOTHER REGULATOR TO FAIL WITH THE UNDERB IZZED DUCT.							
CORRECTIVE ACTION-NONE, PROBLEM WAS TEST STAND PECULIAR.							
PNEUMATIC-A/B TANK PRESS	9A-08-108 MANUAL SHUT OFF VALVE, SEAL	FAR 27-08108-1	910710	WARREN	YES NO	PEACOCK	099708
FAILURE MODE-INTERNAL LEAK-BUTTERFLY SHAFT TWISTED AND RUBBER SEAL TORN AS A RESULT OF ATTEMPTING TO OPEN VALVE WIT H COVER PLATE ATTACHED.							
CORRECTIVE ACTION-PERSONNEL ALERTED AGAINST OPERATING VALVE WITH PLATE ATTACHED.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	9F-08-196 MANUAL SHUTOFF VALVE, SEAL	FAR 27-08108-1	910710	WAFB	YES NO	YES PEACOCK	090009
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE. SEAL WAS FOUND TO BE SHEARED AND TORN. THE BUTTERFLY WAS LOCA TED BEYOND THE CLOSED POSITION. THE SHAFT WAS TWISTED AND BENT AND THE SHAFT HEAD CONTAINED DEEP WRENCH MARKS.							
CORRECTIVE ACTION-ALL FIELD PERSONNEL INFORMED OF THE FINDINGS AND CAUTIONED ON OPERATION OF THE VALVE.							
PNEUMATIC-A/B TANK PRESS	9A-08-230 BOIL-OFF VALVE-BELLOWS	FAR 27-90750-641	910706	EDWARDS	YES NO	YES GO/C	094656
FAILURE MODE-STRUCTURAL. TWO VALVES REJECTED FOR SAME REASON. FAILURE TO MAINTAIN REQUIRED TANK PRESSURE DURING SLU GGING. BOTH VALVES EXPERIENCED SEVERAL SUCH OPERATIONS PRIOR TO FAILURE. THE BELLOWS STOP WAS DEFORMED CAUSING A MOL E TO BE WORN IN THE BELLOWS IN BOTH VALVES. 6 SIMILAR FAILURES REPORTED IN FAR 90-08-233.-234.-245.-246.-247.-232.- 271.-272.							
CORRECTIVE ACTION-A SHOCK ABSORBER IS BEING DEVELOPED TO SOLVE THIS PROBLEM.							
PNEUMATIC-A/B TANK PRESS	9F-08-248F FUEL TANK PRESSURE REGULATOR	FAR 27-08102-18	49E 910705	WAFB	YES NO	YES B.M. MADLEY	097267
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXCESSIVE LEAKAGE DURING A MAPME CHECK NO-60. LEAKAGE NOT CONFIRMED.							
CORRECTIVE ACTION-E SERIES PROCEDURE CHANGED TO CHECK TRANSDUCER 43 AND 48 PRIOR TO REPLACING A REGULATOR IN SUCH I NSTANCES.							
PNEUMATIC-A/B TANK PRESS	98-08-231 LOW TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	910429	ETR	YES NO	YES B. M. MADLEY	090009
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR IMPROPER INSTALLATION. VALVE WAS SECURED WITH SEVEN 10-24 BOLTS AN D 10-32 NUTS WHERE TWELVE 10-32 BOLTS OR STUDS AND NUTS SHOULD HAVE BEEN USED. SIMILAR CASE REPORTED BY ETR ON JULY 9, 1962.							
CORRECTIVE ACTION-A SURVEY OF VEHICLES IN PRODUCTION WAS MADE TO INSURE NO OTHER SUCH CASES EXISTED. NONE WERE FOUND O. INSPECTION WAS NOTIFIED AND INSTRUCTED PERSONNEL TO TIGHTEN UP INSPECTION.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-242F LOX TANK PRESSURE REGULATOR SEAL	FAR 27-08249-9	111D 610829	ETR	YES NO	B.M. MADLEY	997930
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR BLEEDING THROUGH THE BLEED PORT DURING STANDBY.							
CORRECTIVE ACTION - VENDOR PERSONNEL WERE INSTRUCTED TO TAKE SPECIAL PRECAUTIONS IN HANDLING O-RINGS. SITE PERSONNEL ADVISED TO TAKE GREATER CARE IN HANDLING COMPONENTS.							
PNEUMATIC-A/B TANK PRESS	CT-98-08-004 PRESSURE DIFFERENTIAL SWITCH	FAR 27-08130-1	104D 610829	WTR	YES NO	HYDRA ELECTRIC	994870
FAILURE MODE-OUT OF TOLERANCE. ACTUATED TOO LOW, AT 0.5 PSID. ALLOWABLE LIMIT IS 0.9 PLUS OR MINUS 0.3 PSID. DURING ANALYSIS FIRST TEST WAS OUT BUT FOLLOWING TESTS WERE WITHIN TOLERANCE, BELIEVED DUE TO CONTAMINATION.							
CORRECTIVE ACTION-60/A WILL INCLUDE SALT ATMOSPHERE TESTING IN G.C. DOCUMENT 27 8C-08023 PER 27-09130, 4.4.6. ACTION IN TO PREVIOUS FAILURES COVERED BY PAR 90-08-837.							
PNEUMATIC-A/B TANK PRESS	64-08-227 STAGING DISCONNECT SEAL	FAR 27-08122-3	53D 610821	WTR	YES NO	B.M. MADLEY	997943
FAILURE MODE-CONTAMINATION-UNIT REJECTED FOR EXTERNAL LEAKAGE, CAUSED BY CONTAMINATION WHICH SCORED THE SEAL.							
CORRECTIVE ACTION-SITE INFORMED OF CAUSE OF LEAKAGE IN ORDER TO CHECK FOR SOURCE OF CONTAMINATION.							
PNEUMATIC-A/B TANK PRESS	A-98-08-253F HELIUM CHANGE-OVER VALVE	FAR 27-08116-11	31C 610823	FAIRCHILD D	YES NO	ROBERTSON FUL TON	994837
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FOR FAILING TO CLOSE AT 3000 PSI AND CLOSING AT 1800 PSI. NO ABNO RMALITIES WERE FOUND IN THE VALVE OPERATION. IT WAS CONCLUDED INADEQUATE VOLTAGE WAS APPLIED TO THE VALVE. TWO SIMILAR PROBLEMS REPORTED IN PAR A-98-08-250F, 250F.							
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	OIF DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	A-90-08-239F HELIUM CHANGE-OVER VALVE THRUST WAS 27-08113-11 SWER	FAR	1030 610324	WTR	YES NO	ROBERTSHAW FUL TOM	000001
FAILURE MODE-STRUCTURAL. FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE TO OPERATE UNDER 3000 PSIG DURING A SYSTEM TEST. TEFLON THRUST WASHER ON THE ACTUATING SHAFT HAD JAMMED THE MECHANISM. THE MOTOR SHOWED SIGNS OF EXTREME HEAT AND THE BEARINGS WAS BURNED AND FROZEN.							
CORRECTIVE ACTION-THE VENDOR REDESIGNED THE THRUST WASHER.							
PNEUMATIC-A/B TANK PRESS	9H-08-235 SOIL OFF VALVE SOLENOID	FAR 27-80730	20E 610319	FOAFB	YES NO	60/C	007626
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR LEAKING CONTINUALLY THROUGH THE VENT PORT WITH 6 PSIG LOW TANK PRESSURE. LEAKAGE COULD NOT BE CONFIRMED. HOWEVER, THE SPRING IN SOLENOID B WAS FOUND TO BE TOO LOW TO HAVE POSSIBLY CAUSED THE PROBLEM.							
CORRECTIVE ACTION-THIS PROBLEM REFERRED TO THE RELIABILITY DIAGNOSTIC TEAM.							
PNEUMATIC-A/B TANK PRESS	A-9H-08-274F HELIUM CHANGE-OVER VALVE	FAR 27-08113-11	20E 610317	FAIRCHILD D	YES NO	ROBERTSHAW FUL TOM	004640
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE TO CLOSE DURING SYSTEM TEST. FAILURE WAS NOT CONFIRMED.							
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.							
PNEUMATIC-A/B TANK PRESS	9H-08-239 SOIL-OFF VALVE SEAL	FAR 27-80730-011	610300	FACTORY	YES NO	60/C	000000
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE FROM THE LIP SEAL.							
CORRECTIVE ACTION-UNKNOWN NONE-LEAKAGE NOT CONFIRMED.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIV DATA SOURCE PART NUMBER	VEHICLE DATE DIV	DATE TIME DIV	PR1 10TH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	9K-08-223 FUEL TANK PRESSURE REGULATOR	FAR 27-06102-23	19E 610428	FAIRCHILD D	YES NO	FLUIDGENICS
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR VENTING GAS DURING THE FUEL LOADING PORTION OF THE PNEUMATIC B-STEM 7 EST. VENTING COULD NOT BE CONFIRMED. ONE IDENTICAL PROBLEM REPORTED IN FAR 9K-08-224.						
CORRECTIVE ACTION-NONE-PROBLEM COULD NOT BE CONFIRMED.						
PNEUMATIC-A/B TANK PRESS	9D-08-221 FUEL TANK PRESSURE REGULATOR	FAR 27-08102-13	7E 610421	WTR	YES NO	B.H. MADLEY
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR FAILURE TO MAINTAIN TANK PRESSURE AT 42.5 PSIG-THE PRESSURE EXCEEDED TO PSIG. FAILURE COULD NOT BE CONFIRMED.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	D8-08-222 LOX PRESSURE SENSE LINE STAGING DI SCONNECT	FAR 27-08125-11-3	17 610324	BYC.	NO NO	B.H. MADLEY
FAILURE MODE-LEAK-EXTERNAL-TWO COMPLETE UNITS REJECTED FOR EXTERNAL LEAKAGE. LEAKAGE WAS DETERMINED TO BE WITHIN THE ALLOWABLE OF 5 SCFH.						
CORRECTIVE ACTION-NONE-LEAKAGE WITHIN LIMITS.						
PNEUMATIC-A/B TANK PRESS	9G-08-193 LOX TANK PRESSURE REGULATOR	FAR 27-08243-17	98D 610302	OFFUTT	NO NO	FLUIDGENICS
FAILURE MODE-FAIL DURING OPERATION. DURING AN APACHE LEAK CHECK, ERRONEOUS VENTING OCCURRED. VENTING WAS DUE TO INCOMPATIBILITY OF APACHE PROCEDURE AND THE REGULATOR.						
CORRECTIVE ACTION-APACHE DECK BEING CHANGED TO BE COMPATIBLE WITH REGULATORS.						
PNEUMATIC-A/B TANK PRESS	9G-08-207 FUEL TANK PRESSURE REGULATOR CAP	FAR 27-08102-7	98D 610300	CAFB	YES NO	B.H. MADLEY
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR REGULATING OUT OF TOLERANCE. TESTING REVEALED IT WAS REGULATING TOO SMALLY BUT LEAK-FILLING WAS HIGH. THIS WAS CAUSED BY THE SHUT-OFF CONTROLLER CAP BEING LOOSE, THOUGH SAFETY WIRES. P						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
ROPER TIGHTENING THE CAP CURED THE PROBLEM.						
CORRECTIVE ACTION-VENDOR REQUESTED TO IMPROVE HIS INSPECTION PROCEDURES.						
PNEUMATIC-A/B TANK PRESS	98-08-193 LOX TANK PRESSURE REGULATOR	FAR 27-08243-17	98D 610300	CAF3	NO NO	NO P AND 6 TOOL C NO O.
FAILURE MODE-LEAK-EXTERNAL-UNIT REJECTED FOR EXTERNAL VENTING DURING APCHE LEAK CHECK. LEAKAGE NOT CONFIRMED. THE INDICATION OF FAILURE WAS DUE TO INCOMPATIBILITY OF THE APCHE DECK AND THE REGULATOR.						
CORRECTIVE ACTION-APCHE DECK CHANGED.						
PNEUMATIC-A/B TANK PRESS	98-08-210 LOX TANK PRESSURE REGULATOR	FAR 27-80400-807	12E 610229	ETR	YES NO	YES STRATOR
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR ALLOWING TANK PRESSURE TO DROP TO 16 PSI WITH NO APPARENT INDICATION OF PRESSURE INCREASING. EXIMINATION DISCLOSED CONTAMINATION OF THE UNIT INCLUDING THE TIP OF A GRINDING WHEEL SHAFT. OTHER AREAS OF THE UNIT CONTAINED PARTICLES OF SAND. MANY PARTS WERE WORN AND BINDING AS RESULT OF THE CONTAMINATION. THE SOURCE OF THE CONTAMINATION COULD NOT BE DETERMINED EVEN AFTER ANALYZING CONTAMINATION IN OTHER PARTS OF THE SYSTEM.						
CORRECTIVE ACTION-RELIABILITY DIAGNOSTIC TEAM FORMED TO INVESTIGATE SYSTEM CONTAMINATION PROBLEMS.						
PNEUMATIC-A/B TANK PRESS	98-08-210 LOX TANK PRESSURE RELIEF VALVE	FAR 27-08103-3	12E 610221	13	YES NO	YES B.N. MADLEY
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE DURING LOW PRESSURE CHECK. LEAKAGE COULD NOT BE CONFIRMED, HOWEVER, IT IS POSSIBLE THE PROBLEM COULD HAVE BEEN CAUSED BY CONTAMINATION BEING TEMPORARILY LODGED IN THE RELIEF VALVE. NO CONTAMINATION WAS FOUND IN THE VALVE. THIS IS THE SAME SYSTEM THAT HAD A CONTAMINATED REGULATOR REPORTED IN PAR 98-08-210.						
CORRECTIVE ACTION-UNKNOWN, NONE-FAILURE NOT CONFIRMED.						
PNEUMATIC-A/B TANK PRESS	98-08-210 FUEL TANK PRESSURE REGULATOR	FAR 27-08102-7	79D 610808	WTR	YES NO	YES B.N. MADLEY
FAILURE MODE-LEAK-EXTERNAL, UNIT REJECTED FOR EXTERNAL LEAKAGE FROM THE MOTOR SECTION VENT. LEAKAGE WAS NOT CONFIRMED.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OIR	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-NONE, FAILURE NOT CONFIRMED.						897750
PNEUMATIC-A/B TANK PRESS	AC-81-0085/32-502-A2-06	CAPTIVE	62 010207	32 59-93	YES NO		898047
FAILURE MODE-OUT OF EXPECTED TEST VALUE-LOX REGULATOR INLET TEMPERATURE INCREASED TO A MAXIMUM OF 419 DEG BY BECO. THIS IS A 130 DEG HIGHER THAN VALUES RECORDED DURING MISSILE BE TESTING. TEMPERATURES IN EXCESS OF 200 DEG WERE ALSO NOTED AT THE DUCT ELBOW AND RELIEF VALVE SKIN BY 11 PLUS 22 AND BECO PLUS 5 SECONDS, RESPECTIVELY.							
SYSTEM EFFECT-HIGH TEMPERATURE ENVIRONMENT.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	90-08-211 FUEL TANK PRESSURE REGULATOR	PAR 27-08102-13	7E 010207	081P-1	YES NO	FLUIDGENICS	897760
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR REGULATING AT 60 INSTEAD OF 82 PSIG. FAILURE COULD NOT BE CONFIRMED. THE SENSE LINE VENTING ATMOSPHERE COULD CAUSE FAILURE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	90-08-210 ANNUAL SHUTOFF VALVE DETENT	PAR 27-08108-1	610130	ETR	YES NO	PEACOCK	898832
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR A SCORED DETENT RELEASE AND A NORM DETENT SOCKET. CONDITION CONFIRMED AND THE VALVE COULD NOT BE BROUGHT TO THE FULL CLOSED POSITION WITHOUT EXCEEDING MAXIMUM ALLOWABLE TORQUE. 5 IN SIMILAR CASES REPORTED IN PAR 94-08-226. -228.-219.-244.							
CORRECTIVE ACTION-VENDOR TO IMPROVE QUALITY CONTROL. STOPS TO BE INCORPORATED FOR THE CLOSED POSITION. TORQUE REQUIREMENT TO BE LOWERED.							
PNEUMATIC-A/B TANK PRESS	AC-81-0086/32-501-A1-06 PNEUMATIC SYSTEM	CAPTIVE	62 01C183	32 13	NO NO		
FAILURE MODE-OUT OF EXPECTED TEST VALUE. FOLLOWING TESTED TO SEQUENCE 3 PRESSURIZATION AFTER CUTOFF, THE LOX TANK A NO LOX REGULATOR DISCHARGE PRESSURES DECAVED 4.2 AND 9.6 PSI, RESPECTIVELY.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
SYSTEM EFFECT-OPERATION TOO LOW.							898064
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN. POST TEST INVESTIGATION REVEALED NO ABNORMALITIES.							
PNEUMATIC-A/B TANK PRESS	90-08-197 LOX TANK PRESSURE REGULATOR	FAR 27-80400-807	810119	1-4	YES	STRATOR NO	898706
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. REGULATOR DID NOT PRESSURIZE LOX TANK DUE TO FREEZING OF INTERNAL Y TRAPPED WATER. WATER ORIGINATED FROM A FIREX NOZZLE UNIQUE TO 1-4							
CORRECTIVE ACTION-REGULATOR PROTECTED FROM WATER ON ALL FUTURE FIRINGS AT 1-4E.							
PNEUMATIC-A/B TANK PRESS	96-08-215 SENSELINE/NUT/OFF VALVE, SEAL	FAR 27-08403	810119	04PB	YES	ON MARK CO. NO	897786
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR INTERNAL LEAKAGE. RUBBER PARTICLES WERE FOUND IN THE O-RING SEAL AREA AND IN THE VALVE BODY. THE O-RING WAS TORN AND CHIPPED. THE RUBBER LINE SEALS WERE SHEARED AND TORN.							
CORRECTIVE ACTION-60/C TOOK ACTION TO REVIEW SEAL DESIGN WITH THE VENDOR, AND, REQUESTED PROPOSALS FOR AN ALTERNATE AND INTERCHANGEABLE VALVE. NOTE, DESIGN CHANGE REMOVED VALVE FROM SYSTEM AND UTILIZED NEW CHECKOUT PROCEDURE.							
PNEUMATIC-A/B TANK PRESS	88-08-193 LOX TANK PRESSURE REGULATOR, NUT	FAR 27-80400-807	RE 810119	32	YES	STRATOR/CONVAIR NO R	898873
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. STOP VALVE POPPET JAMMED IN OPEN POSITION DUE TO RETAINING NUT BAC KING OFF.							
CORRECTIVE ACTION-RETAINING NUTS TO BE TORQUED TO DRAWING CHANGE AND LOCK TITE APPLIED TO THREADS. ALL UNITS TO BE FIELD CHECKED.							
PNEUMATIC-A/B TANK PRESS	96-08-109 FLEX HOSE ASSEMBLY.	FAR 27-08210-1	890 810107	OFFUTT	YES	FLEX METAL HOSE NO S CO.	
FAILURE MODE-STRUCTURAL-FAILED JOINT BETWEEN 321 STAINLESS TUBE AND BELLOW AREA DUE TO LACK OF SILVER SOLDER ADHESION.							

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SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OIM	VENDOR NAME VENDOR PART NO	
SUB-SYSTEM							
	CORRECTIVE ACTION-MANUFACTURING CHANGE IN PROCESS BY VENDOR. SAMPLING PLAN INITIATED BY VENDOR TO TEST ONE OUT OF FIVE ASSEMBLIES. EXISTING STOCK DYE CHECKED.						
PNEUMATIC-A/B TANK PRESS	9A-06-197 LOX TANK PRESSURE REGULATOR	FAR 27-80480-807	910100	END	YES	STRATOS NO	998004
	FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR FAILURE TO PRESSURIZE TANK AT STAND 1-4C. REGULATOR WAS FOUND TO CONTAIN A LARGE AMOUNT OF WATER. AMBIENT TEMPERATURE ON THE STAND, NEAR THE REGULATOR, WAS BELOW FREEZING. DURING FAILURE ANALYSIS VALVE WOULD NOT FUNCTION AT BELOW FREEZING TEMPERATURES, BUT WOULD AT WARMER TEMPERATURES.						
	CORRECTIVE ACTION-END TO INSTALL PROTECTIVE COVER OVER THE REGULATOR TO SHIELD IT FROM WATER SPRAY FROM THE FIRE EXTINGUISHER SYSTEM.						
PNEUMATIC-A/B TANK PRESS	88-C8-193 LOX TANK PRESSURE REGULATOR NUT	FAR 27-80480-807	910100	END	YES	STRATOS NO	998003
	FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR FAILURE TO OPEN. THE STOP VALVE PILOT TO DIAPHRAGM ASSEMBLY RETAINING NUT HAD BACKED OFF AND FOUND LODGED BETWEEN THE DIAPHRAGM AND THE HOUSING. THIS CAUSED A BENT PILOT SHAFT AND PREVENTED STOP VALVE MOVEMENT.						
	CORRECTIVE ACTION-ALL REGULATORS WERE CHECKED FOR PROPER STOP VALVE NUT TORQUE. ALL FUTURE PRODUCTION VALVES WILL BE TORQUED PROPERLY AND THE THREADS CONTAIN LOCK TITE TO SECURE THE NUTS.						
PNEUMATIC-A/B TANK PRESS	9A08192 LOX TANK PRESSURE REGULATOR, NUT	FAR 27-08101-18	1-4E 901816	END	YES	FLUORENCE NO	998078
	FAILURE MODE - FAIL DURING OPERATION. GALLING OF STOP VALVE NUT CAUSED STOP VALVE TO CLOSE INADVERTENTLY AND DECREASE LOX TANK PRESSURE.						
	CORRECTIVE ACTION-VENDOR TO USE A STEEL SLEEVE IN FEMALE PILOT GUIDE TO PREVENT GALLING. RETRO FIT FOR ALL FLIGHT VEHICLES.						
PNEUMATIC-A/B TANK PRESS	90-06-803 MELTUM PRESSURIZATION FLEX HOSE DE 87-08228-1 LLONG	FAR 27-08228-1	TC 901814	WTR	YES	CORBA NO	
	FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE NEAR AN END FITTING. THE FIRST BELLOW CONVOLUTION ADJACENT TO THE END FITTING WAS REVERLY DENTED AND COLLAPSED. THE SHARP DENTS CAUSED FATIGUE CRACKING AND LEAKAGE.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-60/C TOOK ACTION WITH THE VENDOR TO PREVENT SUCH FUTURE FAILURE.							097761
PNEUMATIC-A/B TANK PRESS	96-08-214 FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08164-2	960 001812	UAFB	YES NO	S.H. MADLEY	097749
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR OUT OF TOLERANCE DURING ABOVE CHECKOUT. NO PROBLEM WAS ENCOUNTERED IN ADJUSTING THE CRACKING PRESSURE AND THE VALVE OPERATED NORMALLY.							
CORRECTIVE ACTION-NONE-FAILURE NOT REPAIRABLE.							
PNEUMATIC-A/B TANK PRESS	ETR-032/14-312-F3-2E LOW TANK PRESSURE REGULATOR	CAPTIVE	601209	1-4 3.9	YES NO	STRATON	099087
FAILURE MODE-FAILURE DURING OPERATION- THE LOW TANK PRESSURE REGULATOR DID NOT MAINTAIN PROPER TANK PRESSURE. SYSTEM EFFECT-OPERATION TOO LOW- LOW TANK PRESSURE DROPPED TO 11.9 PSIG AT 3.9 SECONDS. VEHICLE EFFECT- NONE.							
CORRECTIVE ACTION-THE REGULATOR WAS REMOVED FOR FAILURE ANALYSIS AND WAS FOUND TO CONTAIN MOISTURE. THE REGULATOR WAS ALIEN IN THE LAB WHEN SUBJECTED TO SUB-FREEZING TEMPERATURE.							
PNEUMATIC-A/B TANK PRESS	9A-08-192 LOW TANK PRESSURE REGULATOR	FAR 27-08101-13	601200	288	YES NO	FLUIDGENICS	097561
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FOR ALLOWING TANK PRESSURE TO DROP TO 18 PSIG MOMENTARILY AFTER 3 SECONDS OF A RUN. THE STOP VALVE PILOT GUIDE AND BORE WERE FOUND TO BE GALLED. THIS PROBABLY CAUSED STICKING OF THE STOP VALVE.							
CORRECTIVE ACTION-VENDOR MODIFIED THE REGULATOR DESIGN, INCORPORATING A STEEL SLEEVE IN THE FEMALE PILOT GUIDE.							
PNEUMATIC-A/B TANK PRESS	98-08-198 LOW TANK PRESSURE REGULATOR	FAR 27-08245-17	60 001120	83	YES NO	FLUIDGENICS	098859
FAILURE MODE-FAIL DURING OPERATION-UNIT FAILED TO REGULATE DUE TO AN IMPROPERLY VULCANIZED RUBBER CONTROLLER SEAT.							
CORRECTIVE ACTION-ALL UNITS RETURNED TO VENDOR TO BE REWELDED TO NEW BUSH NUMBERS. AN O-RING TYPE CONTROLLER SEAT WILL BE USED.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	ETR-030/14-330-03-SE LOX TANK PRESSURE REGULATOR	CAPTIVE 87-00400-007	601110	1-4 8.	YES NO	STRATOS	000000
FAILURE MODE-ERRATIC OPERATION. THE AIRBORNE LOX TANK REGULATOR MOMENTARILY WENT TOWARD THE CLOSED POSITION. SYSTEM EFFECT-OPERATION TOO LOW- ABNORMAL DROP IN LOX TANK PRESSURE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	90-08-194 LOX TANK 2 INCH PRESSURIZATION DUC T BELLOWS	FAR 7-73313-021	8E 601110	ETR	NO NO	LAMELEY CORP.	007751
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE- THE UNIT WAS REJECTED FOR SEVERE KINKS AND DEFORMATION OF THE EXPAN SION BELLOWS. A SECOND CASE WAS ALSO REPORTED FROM VEHICLE 9C AT ETR. IT WAS DETERMINED THAT THE BELLOWS WERE STRETCH ED DURING RECLEANING BY THE VENDOR WHICH DEFORMED AND KINKED THE UPPER BELLOWS. CORRECTIVE ACTION-THE VENDOR PROVIDED A FITTURE TO HOLD THE DUCT DURING CLEANING RATHER THAN SUSPEND THE ASSEMBLY O N THE BELLOWS.							
PNEUMATIC-A/B TANK PRESS	90-08-194 FUEL TANK PRESSURE RELIEF VALVE	FAR 27-00104-3	700 601110	1-1	YES NO	HADLEY	000707
FAILURE MODE-OUT OF TOLERANCE. FAILED TO RELIEVE AT PRESSURE OVER 65 PSIG. REQUIRED TO RELIEVE AT 65 PLUS OR MINUS 0.5. CORRECTIVE ACTION-UNKNOWN-DISASSEMBLY DID NOT REVEAL SOURCE OF DISCREPANCY.							
PNEUMATIC-A/B TANK PRESS	90-08-194 FUEL TANK PRESSURE RELIEF VALVE	FAR 27-00104-3	700 601110	11TLA	YES NO	B.M. HADLEY	007200
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE TO VENT TANK PRESSURE AT OVER 65 PSIG. V E A REQUIRED 65 PSIG. CORRECTIVE ACTION-NONE. FAILURE NOT CONFIRMED.							

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GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PR OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	AABO-0134/PE-401-00-03 REGULATORS, TANK PRESSURIZATION	COUNTDOWN	88D 80110	12 -2300	YES NO	YES FLUIDMECHNCS	807778
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. RELIABILITY OF THE REGULATORS WAS QUESTIONABLE.							
SYSTEM EFFECT-NONE.-							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-FLUIDMECHNCS REGULATORS REPLACED WITH MAXLEY RESS.							
PNEUMATIC-A/B TANK PRESS	ETR-009/14-520-C3-SE LOX TANK PRESSURE REGULATOR	CAPTIVE	801108	1-4 1.9	YES NO	YES FLUIDMECHNCS	809865
FAILURE MODE-FAILURE DURING OPERATION- THE AIRFRAME LOX TANK REGULATOR CLOSED PARTIALLY AT 7.9 SECONDS.							
SYSTEM EFFECT-OPERATION TOO LOW- LOX TANK PRESSURE DROPPED TO 18.3 PSIG.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE REGULATOR WAS REMOVED FOR FAILURE ANALYSIS.							
PNEUMATIC-A/B TANK PRESS	9008194 DIFFERENTIAL PRESSURE TRANSDUCER	FAR 27-08109-1	4E 801103	13	YES NO	YES CRESCENT ENGR.	804872
FAILURE MODE-OUT OF TOLERANCE-HIGH OUTPUT THROUGHOUT ITS SPECIFIED PRESSURE RANGE.							
CORRECTIVE ACTION-UNKNOWN-FAILURE NOT DUPLICATED. VENDOR REQUESTED TO CORRECT DESIGN DEFICIENCIES REVEALED DURING D ISASSEMBLY.							
PNEUMATIC-A/B TANK PRESS	90-08-184 DIFFERENTIAL PRESSURE TRANSDUCER	FAR 27-08109-1	4E 801103	ETR	YES NO	YES CRESCENT ENGR. NO CORP. 89-3001	804884
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE TO RESPOND WITH VARIED PRESSURE. THE LOW PRESSURE COIL D.C. RESISTANCE WAS EXCESSIVE-AND, CHIPS OF POTTING MATERIAL WERE FOUND BETWEEN THE POLE PIECE AND THE DIAPHRAGM. WHICH COULD CAUSE AN ERRONEOUS OUTPUT, ONE SIMILAR CASES REPORTED ON FAR 90-08-208.							
CORRECTIVE ACTION-VENDOR INFORMED OF PROBLEM AND REQUESTED TO MAKE CORRECTIONS. A SECOND SOURCE VENDOR IS BEING SOU GHT.							

GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

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GENERAL LAMICS
CONVAIR DIVISION

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PHJ OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	90-08-188 FUEL TANK RELIEF VALVE, DIAPHRAGM	PAR 27-08104-3	710 000928	11	YES	B.M. MADLEY NO	089684
FAILURE MODE-INTERNAL LEAK. CAUSED BY A TEAR IN THE FIRST STAGE DIAPHRAGM APPROX. 0.060 INCHES LONG.							
CORRECTIVE ACTION-UNKNOWN. VENDORS DIAPHRAGM STOCK CHECKED. NO DETEIORATED STOCK REVEALED.							
PNEUMATIC-A/B TANK PRESS	90-08-188 FUEL TANK PRESSURE RELIEF VALVE, DIAPHRAGM	PAR 27-08104-3	710 000928	ETN	YES	B.M. MADLEY NO	089680
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE AT THE PRIMARY CONTROLLER DURING PRESSURE VALIDATION. THE PRIMARY CONTROLLER DIAPHRAGM CONTAINED A TEAR 0.060 INCH LONG. THE MATERIAL WAS WORN AND BROKEN, INDICATIVE OF EXCESSIVE FLEXING OR DETEIORATED MATERIAL.							
CORRECTIVE ACTION-VENDOR CHECK FOR DETEIORATED DIAPHRAGM STOCK-NONE WAS FOUND.							
PNEUMATIC-A/B TANK PRESS	88-08-213 BOIL-OFF VALVE	PAR 27-80750-321	5C 000927	BYCAMORE	YES	60/C NO	087727
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR CHATTERING OF THE ASSEMBLY AT NORMAL PRESSURE. PROBLEM COULD NOT BE CONFIRMED IN LABS.							
CORRECTIVE ACTION-SECOND SOURCE BEING INVESTIGATED FOR A REPLACEMENT BOIL OFF VALVE.							
PNEUMATIC-A/B TANK PRESS	AE60-0746P1-401-00-76 LOX TANK PRESSURE REGULATOR	FLIGHT	780 000918	11 94	YES	MADLEY NO	087787
FAILURE MODE-ERRATIC OPERATION. ERRONEOUS PARTIAL OPENING OF THE LOX TANK PRESSURE REGULATOR APPARENTLY RESULTING FROM A MECHANICAL MALFUNCTION WITHIN THE REGULATOR. ANOTHER POSSIBILITY WAS INCREASED LOX BLOWING WHICH CAUSED EXCESSIVE BOILOFF AND INCREASED TANK PRESSURE.							
SYSTEM EFFECT-ERRATIC OPERATION. LOX TANK PRESSURE STARTED TO INCREASE FROM 25.8 PSIA AT 84 SECONDS. MAXIMUM VALUE OF 28.9 PSIA WAS REACHED AT 103 SECONDS. PRESSURE THEN DECAYED TO FORMER VALUE OF 28.9 PSIA BY 125 SECONDS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	AC-80-0033/32-310-AA-02 HELIUM CHANGE OVER VALVE	CAPTIVE 27-03110-1	2E 800918	32	YES NO	090904
FAILURE MODE-FAILURE TO OPERATE AT PRESCRIBED TIME- MOTOR OPERATED VALVE FAILED TO CYCLE AUTOMATICALLY AT YECO.						
SYSTEM EFFECT-OPERATION TOO LONG- FUEL TANK PRESSURE COULD NOT BE REESTEPED TO SEQUENCE 11 UNTIL THE TANK PRESSURIZZ ATION BOTTLE WAS DEPLETED.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-CHANGEOVER VALVE REPLACED.						
PNEUMATIC-A/B TANK PRESS	AE60-075483-401-00-47 BOILOFF VALVE	FLIGHT	47D 800912	3768-3 -80	YES NO	090103
FAILURE MODE-LEAK EXTERNAL. LAUNCH FILMS INDICATED THAT THE LOW TANK BOILOFF VALVE WAS LEAKING AFTER IT HAD BEEN CL OSED AT STAGE 3 PRESSURIZATION. MAY HAVE BEEN DUE TO A CRACKED TEFLON SEAL AS EXPERIENCED WITH THIS TYPE VALVE ON OT HER TESTS.						
SYSTEM EFFECT-NONE. LEAKAGE WAS MINOR AND WAS NOT REFLECTED IN ANY OTHER PNEUMATIC SYSTEM DATA.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	90-08-178 BOILOFF VALVE-MOTOR	FAR 27-80388-821	25D 800900	82	YES STEWART WARNER NO 902-0023	090658
FAILURE MODE-LEAK-EXTERNAL-NEAR MOTOR MAGNETS PREVENTED REQUIRED BRAKING CAUSING FAILURE OF THE BUTTERFLY VALVE TO CLOSE PROPERLY. BUTTERFLY VALVE WAS STOPPING PAST FULL CLOSED POSITION ALLOWING GAS TO ESCAPE AROUND LIP SEAL.						
CORRECTIVE ACTION-60/C PROPOSED THAT SIMILAR TYPE VALVES AND ITS CONTROLLER (P/N 27-08112-18) BE RETRACTED WITH POPP ET STYLE VALVE (P/N 27-80780) TO INCREASE MISSILE RELIABILITY. REQUEST DIS-ALLOWED.						
PNEUMATIC-A/B TANK PRESS	88-08-182 HELIUM CHANGEOVER VALVE SWITCH	FAR 27-08116-11	2E 800900	87C.	YES ROBERTMAN FUL NO TON	090658
FAILURE MODE-OPEN (ELECT.) THREE UNITS WERE REJECTED FOR FAILURE TO OPERATE AFTER 2 TO 3 STATIC FIRINGS. ALL UNITS SHOWED OPEN ELECTRICAL CIRCUITS-TWO UNITS CONTAINED WATER IN THE AREA OF THE MICROSWITCHES AND MOTOR. THE THIRD UNI TS MICROSWITCH LEAF SPRING WAS DEFORMED DUE TO OVERHEATING. BY EXCESSIVE CURRENT.						
CORRECTIVE ACTION-IT WAS DETERMINED THAT THE FIRE EXTINGUISHING SYSTEM AT BYCARE DIRECTED STREAM OF WATER. AT 180						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PMI OIM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	AD80-0001/0A237/82-IMO-08-23 BOILOFF VALVE	COMPOSITE-FRD/DPL	33D 000007	B-2	YES NO	CONVAIR	0946033
<p>FAILURE MODE-FAIL DURING OPERATION. DURING LOX LOAD THE PCU WENT INTO EMERGENCY MODE BECAUSE OF LOW MISSILE LOX TANK PRESSURE. THE PRESSURE COULD NOT BE RAISED TO SAFE LEVEL FROM THE LAUNCH OPERATORS PANEL. BOILOFF VALVE WAS NOT MAINTAINING PROPER MISSILE LOX TANK PRESSURE UNDER AUTOMATIC OPERATION.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-THE BOILOFF VALVE WAS CLOSED BY REMOVING THE CONTROL WIRE IN THE BLOCKHOUSE BASINMENT. THE BOILOFF VALVE WAS MANUALLY CONTROLLED IN THIS MANNER UNTIL LOX WAS DRAINED. THE BOILOFF VALVE WAS REPLACED AFTER THE TEST.</p>							
PNEUMATIC-A/B TANK PRESS	90-08-201 DIFFERENTIAL PRESSURE SWITCH	FAR 27-08130-1	37D 600720	WTR	YES NO	HYDRA ELECT. C	0946033
<p>FAILURE MODE-CONTAMINATION CAUSED FAILURE DURING OPERATION. SIX SWITCHES WERE COVERED BY THIS FAR-WTR 2. FACTORY 2-0470 1. ETR 1. FOUR SWITCHES ACTUATED AT BELOW REQUIRED PRESSURE. ONE DID NOT OPERATE-AND, ONE OPERATED ERRATICALLY. CAUSE OF FAILURES WAS THE SAME FOR ALL SWITCHES. IT WAS CORROSION OF THE HIGH PRESSURE CHAMBER, BETWEEN THE CAP AND BUSH. THE ORIGIN OF THE CORROSION WAS NOT DETERMINED. ONE SIMILAR CASE REPORTED IN FAR 90-08-223.</p> <p>CORRECTIVE ACTION-A CHANGE WAS INITIATED TO HARD ANODIZE THE CRITICAL PARTS.</p>							
PNEUMATIC-A/B TANK PRESS	9F08190 DISCONNECT-RISE-OFF, HELIUM	FAR 27-08120-7	46D 600713	WARREN	YES NO	B.M. MADLEY	0946078
<p>FAILURE MODE-CONTAMINATION. MOISTURE IN PNEUMATIC SYSTEM CAUSED POPPET TO CORRODE AND LEAK INTERNALLY.</p> <p>CORRECTIVE ACTION-POPPET CHANGED FROM 418 STAINLESS TO A 17-7PH ALLOY WITH A DRY FILM LUBRICANT TO IMPROVE CORROSION RESISTANCE. SITE ADVISED OF EXCESSIVE NOISE.</p>							
PNEUMATIC-A/B TANK PRESS	9F-08-190 HELIUM SUPPLY RISE-OFF DISCONNECT POPPET	FAR 27-08120-7	46D 600713	WAFS	YES NO	B.M. MADLEY	0946078
<p>FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR EXTERNAL LEAKAGE DURING CHECKOUT. INTERNAL PARTS FROM A REPLACEMENT UNIT WERE INSTALLED IN THE HOUSING OF THE FAILED UNIT. THE HOUSING OF THE REPLACEMENT UNIT, WITH THE FAILED INTERNAL PARTS WERE RETURNED FOR FAILURE ANALYSIS. EXAMINATION OF THE FAILED INTERNAL PARTS REVEALED THE POPPET TO BE BUSTED.</p>							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
APPARENTLY THE RESULT OF WATER IN THE GROUND SYSTEM.						
CORRECTIVE ACTION-GROUND SYSTEM PURGED AND POPPET MATERIAL CHANGED TO 17-7PM ALLOY COATED WITH A DRY FILM LUBRICANT						
PNEUMATIC-A/B TANK PRESS	98-08-184 BOIL-OFF VALVE-SEAL	FAR 27-80750-807	840 800715	ETR	YES NO	60/C
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE IN THE CLOSED, OR LOCKED-OUT, POSITION. TANK PRESSURE DROPPED ABOUT 0.25 PSIG PER MINUTE. CONE SEAL CONTAINED A BREAK ABOUT 0.5 INCHES WIDE. THE TEFLON SEAL MATERIAL CONTAINED INCLUSIONS AND MANY SMALL Voids. 3 SIMILAR CASES REPORTED ON FAR 95-08-204.-209.-278.						
CORRECTIVE ACTION-60/C INITIATED ACTION TO IMPROVE THE QUALITY OF TEFLON USED IN ALL MISSILE COMPONENTS.						
PNEUMATIC-A/B TANK PRESS	90-08-182 BOIL-OFF VALVE BELLows	FAR 27-80750-807	800708	WTR	YES NO	60/C
FAILURE MODE-LEAK-EXTERNAL. THREE UNITS REJECTED FOR EXCESSIVE LEAKAGE AND LOW RESEAT PRESSURE. FAILURE WAS NOT CONFIRMED ON ONE UNIT. THE FAILURE WAS CONFIRMED ON THE TWO REMAINING VALVES AND THE CAUSE WAS DETERMINED TO BE MORRNING OF THE BELLows MATERIAL DUE TO CYCLING.						
CORRECTIVE ACTION-60/C TO RE-EVALUATE THIS TYPE VALVE FROM A DESIGN AND QUALITY CONTROL STANDPOINT. RESULTS WILL BE USED TO IMPROVE THE VALVE.						
PNEUMATIC-A/B TANK PRESS	98-08-177 MANUAL SHUT-OFF VALVE, SEAL	FAR 27-08108-3	500 800708	ETR	YES NO	ROBERTSMAN FUL TON CO
FAILURE MODE-STRUCTURAL. EXTERNAL LEAK IN CLOSED POSITION RESULTING IN FUEL TANK PRESSURE DECAY. BUTTERFLY WAS APPROX. 5 DEG FROM CLOSED WHEN VALVE WAS IN CLOSED POSITION INDICATING SHARP HAD TWISTED. VALVE HAD FAILED BECAUSE OF EXCESSIVE SHELLING AND SUBSEQUENT OVER TIGHTENING OF SHARP.						
CORRECTIVE ACTION-60/C PURCHASING VALVES FROM ANOTHER MANUFACTURER.						
PNEUMATIC-A/B TANK PRESS	90-08-181 BOIL-OFF VALVE SOLENOID SWITCH	FAR 27-80750-807	330 800701	WTR	YES NO	60/C
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR ERRONEOUS OPERATOR PANEL INDICATION OF OPEN WHEN LOCKING SOLENOID WAS CLOSED OR LOCKED. SWITCH ACTUATOR STEM WAS TIPPED SIDEWAYS AND LOCKED UNDER A BASKET.						

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PNEUMATIC-A/B	9D-00-175	FAR	99D	82	YES
TANK PRESS	FUEL TANK PRESSURE REGULATOR	P7-0A9A-1	6A0700		NO
					604-0047

CORRECTIVE ACTION-GOYA ALERTED ALL INSPECTION PERSONNEL TO DANGER OF OPERATING REGULATORS WITH CONTROLLER BLEED OUT
CAP IN PLACE. INSTALLATION DRAWINGS CALL OUT DUST CAP REMOVAL.

051685

PNEUMATIC-A/B	90-06-160	PAR	74D	WTR	YES PULCON
TANK PRESS	MELTING RANGE	OVERVALVE, THROUSTUR	NUMBER 27-08118-11	600630	NO 901-0112

CORRECTIVE ACTION-UNUSUAL; VENDOR INFORMED OF DISCREPANCY;

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PNEUMATIC-A/B	98-06-187	FAR	3	12	YES B.M. MADE
TANK PRESS	LOX PRESSURE RELIEF VALVE	27-06103-3	600821		NO

CORRECTIVE ACTION-INSTRUCTIONS ISSUED TO ALL INSPECTORS ON CONTAMINATION PREVENTION PROCEDURES.

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PNEUMATIC-A/B	98-08-187	FAR	320	ETA	YES
TANK PNE18	LOW TANK PRESSURE RELIEF VALVE	87-00103-3			NO

COGNITIVE ACTION-NOVA-PATENTS NOT COMPLETED.

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-187 LOX TANK RELIEF VALVE SENSE LINE	FAR 27-80023-807	32D 800821	CTR	YES NO	60/C	0994286
FAILURE MODE-CONTAMINATION. SUBSEQUENT TO THE REJECTION OF THE RELIEF VALVE (SAME FAR) THE SENSE LINE WAS FOUND CONTAMINATED WITH A BROWN FIBROUS MATERIAL MEASURING 120/320/18 INCH AS WELL AS PLASTIC PARTICLES OVER 175 MICRONS IN SIZE, TOO NUMEROUS TO COUNT. IT WAS CONCLUDED THE CONTAMINANT RESTRICTED THE LINE CAUSING POOR SENSING PRESSURE RESPONSE. THE BROWN MATERIAL WAS DETERMINED TO BE SAME MATERIAL USED TO PACKAGE PARTS BY 60/C.							
CORRECTIVE ACTION-60/C INSPECTION PERSONNEL WERE INSTRUCTED ON CONTAMINATION PREVENTION PROCEDURES.							
PNEUMATIC-A/B TANK PRESS	98-08-189 WELL/CHANGE OVER VALVE, THRUST WASHER	FAR 27-08116-11	33D 600820	BE	YES NO	ROBERT SHAM FU LTON CO 263	0996170
FAILURE MODE-FAILED DURING OPERATION. PLASTIC THRUST WASHERS OF VALVE WERE RUBBING VALVE BODY THUS INCREASING VALVE ACTUATION TIME.							
CORRECTIVE ACTION-UNKNOWN. VENDOR INFORMED OF DISCREPANCY.							
PNEUMATIC-A/B TANK PRESS	DA209/83-4MO-02-93 PNEUMATIC SYSTEM	COMPOSITE-FRD/DPL	33D 600815	3740-3	YES NO		097216
FAILURE MODE-EXTERNAL LEAKAGE OF GAS. LOW PRESSURE IN MISSILE LOX TANK. CAUSE OF PRESSURE DECREASE UNKNOWN.							
SYSTEM EFFECT-OPERATION TOO LOW. (PCU) PRESSURIZATION CONTROL UNIT SWITCHED TO EMERGENCY.							
VEHICLE EFFECT-COUNTDOWN ABORTED.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	98-08-177 MANUAL SHUT OFF VALVE, SEAL	FAR 27-08108-9	33D 600403	CTR	YES NO	ROBERT SHAM FU LTON CO	0996959
FAILURE MODE-LEAK-EXTERNAL. VALVE SEAL DIAMETER APPROXIMATELY 0.010 LESS THAN VALVE BODY DIAMETER CAUSING LEAKAGE. TANK PRESSURE DECAYING AT THE RATE OF 0.4 PSI/HR AT 9 PSIG PRESSURE.							
CORRECTIVE ACTION-60/C PURCHASING VALVES FROM ANOTHER MANUFACTURER.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	9D-08-108 FUEL TANK PRESSURE RELIEF VALVE D1 APHRAGH	FAR 27-08104-3	330 600603	BZ	YES NO	B.M. MADLEY 090653
FAILURE MODE-INTERNAL LEAK DUE TO A SHARP BREAK IN THE FIRST STAGE DIAPHRAGM.						
CORRECTIVE ACTION-UNKNOWN. VENDOR'S DIAPHRAGM STOCK CHECKED. NO DETERIORATED STOCK REVEALED.						
PNEUMATIC-A/B TANK PRESS	9D-08-108 FUEL TANK PRESSURE VALVE DIAPHRAGM	FAR 27-08104-3	330 600603	B-2	YES NO	B.M. MADLEY 090628
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE AT THE PRIMARY CONTROLLER WHILE PRESSURIZING TO 12 P SIG. THE PRIMARY CONTROLLER DIAPHRAGM CONTAINED A SHARP BREAK WHICH ACCOUNTED FOR THE LEAKAGE, AND IS INDICATIVE OF HAVING BEEN OVER PRESSURIZED.						
CORRECTIVE ACTION-NONE INDICATED ON FAR.						
PNEUMATIC-A/B TANK PRESS	9B-08-177 MANUAL SHUTOFF VALVE (SEAL)	FAR 27-08108-3	500 600931	ETR	YES NO	ROBERTMAN FUL TON CO 090657
FAILURE MODE-STRUCTURAL. SEAL SWELLING CAUSED SHAFT TURNING NUT TO SHEAR OFF.						
CORRECTIVE ACTION-VALVE REPLACED. GO/C PURCHASING VALVES FROM ANOTHER MANUFACTURER.						
PNEUMATIC-A/B TANK PRESS	9A-08-172 TANK PRESSURE CHECK VALVE-SEAL	FAR 27-08114-1	600323	ERG	YES NO	B.M. MADLEY CO 090187
FAILURE MODE-LEAK-INTERNAL-TEFLON SEAL COLD FLOWING AS A RESULT OF OVER-TORQUING DURING ASSEMBLY.						
CORRECTIVE ACTION-UNKNOWN. GO/A RECOMMENDED VALVE TO BE FIELD REPAIRED.						
PNEUMATIC-A/B TANK PRESS	9B-08-374 FUEL TANK PRESSURE RELIEF VALVE	FAR 27-08104-3	540 600321	ETR	YES NO	B.M. MADLEY 090187
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME-THE VALVE WAS INCORRECTLY ADJUSTED AND FAILED TO OPERATE PROPERLY						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF	PR1 OTH	VEHICLE NAME VEHICLE PART NO
CORRECTIVE ACTION-CONFIRMED-GO/A CHECKOUT PERSONNEL NOTIFIED FAILURE DUE TO IMPROPER ADJUSTMENT.					
PNEUMATIC-A/B TANK PRESS	AE80-0322PE-403-00-98 LOX PRESSURE ORIFICE	FLIGHT	580 12 800320 136.97	YES NO	897420
FAILURE MODE-ERRATIC OPERATION. THE LOX PRESSURE ORIFICE INDICATED A HELIUM FLOW AT 0.4 SECONDS AFTER BECO. TANK PRESSURES DID NOT INDICATE A REQUIREMENT FOR THIS FLOW.					
SYSTEM EFFECT-ERRATIC OPERATION. DELTA PRESSURE ACROSS THE LOX PRESSURE ORIFICE INCREASED, INDICATING AN INCREASE IN HELIUM FLOW. SOME UNKNOWN PHENOMENON MAY HAVE OCCURRED WHICH AFFECTED THE FLOW OF HELIUM IN THE PRESSURIZATION DUCT OR TRANSDUCER MEASURING ORIFICE.					
VEHICLE EFFECT-NONE.					
CORRECTIVE ACTION-NONE. OTHER POSSIBILITY MAY BE THAT THE SHOCK ASSOCIATED WITH BECO AFFECTED INSTRUMENTATION.					
PNEUMATIC-A/B TANK PRESS	90-08-171 CHANGEOVER VALVE MOTOR	FAR 27-08198-4	530 WTR 800912	YES ROBERTSHAW FUL NO TOM CO 249	898740
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CRACK IN CASE OF LIMIT SWITCHES CAUSING SWITCH NOT TO TRANSFER WHEN ACTUATED THUS FAILING TO OPEN CIRCUIT.					
CORRECTIVE ACTION-CONFIRMED-GO/A RECOMMENDED VENDOR TIGHTEN INSPECTION.					
PNEUMATIC-A/B TANK PRESS	90-08-173 DIFT PRESSURE TRANSDUCER	FAR 27-08103-1	560 ETR 600413	YES CRESENT RIVER C NO O 904-0003	898730
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- TRANSDUCER STICKING AND RESPONSE BLOW AS A RESULT OF COIL AND POLE POTTING COMPOUND EXTENDING ABOVE POLE RESTRICTING DIAPHRAGM MOVEMENT.					
CORRECTIVE ACTION-FAILURE CONFIRMED-GO/C TAKING CORRECTIVE ACTION WITH VENDOR TO CORRECT DISCREPANCY.					
PNEUMATIC-A/B TANK PRESS	DA101/92-401-00-23 BOILOFF VALVE	COUNTDOWN	250 8-2 800406	YES NO	
FAILURE MODE-FAIL DURING OPERATION. BOILOFF VALVE FAILED TO RESET PROPERLY.					
SYSTEM EFFECT-OPERATION TOO LOW. MISSILE LOX TANK FAILED TO REACH FLIGHT PRESSURE DURING COMMIT SEQUENCE.					
VEHICLE EFFECT-COUNTDOWN ABORTED.					

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PSI OTM	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-SHOULDER VALVE REPLACED.							
PNEUMATIC-A/B TANK PRESS	98-08-186 FUEL TANK PRESSURE REGULATOR	FAR 27-00848-3	480 800406	ETR	YES NO	B.M. HADLEY	988748
FAILURE MODE-ERRATIC OPERATION. UNIT REJECTED FOR ALLOWING TANK PRESSURE TO OSCILLATE BETWEEN 97.5 TO 99.5 PSI, USED ER NO-FLOW CONDITIONS. FLOW TESTS REVEALED 8 PSI PEAK TO PEAK OSCILLATIONS AND LOCKED UP AT 62 PSI UNDER NO-FLOW CON DITIONS. THE ACCEPTANCE TEST REPORT SHOWED 1.0 PSI PEAK TO PEAK OSCILLATIONS PRIOR TO VIBRATION AND 2.0 PSI OSCILLAT IONS AFTER VIBRATION.							
CORRECTIVE ACTION-ACCEPTANCE TEST PROCEDURES REVISED TO ACCEPT UNITS WITH NO MORE THAN 1 PSI PEAK TO PEAK OSCILLATI ONS AT A FREQUENCY OF NO MORE THAN 3 CYCLES PER SECOND.							
PNEUMATIC-A/B TANK PRESS	98-08-175 DIP PRESSURE TRANSDUCER	FAR 27-008100-1	550 800323	ETR	YES NO	CRESBENT ENGR. CO. 208	988738
FAILURE MODE-FAIL TO OPERATE-TRANSDUCER STUCK IN ZERO POSITION AS RESULT OF COIL AND POLE POTTING COMPOUND EXTENDED ABOVE POLE RESTRICTING DIAPHRAGM MOVEMENT.							
CORRECTIVE ACTION-CONFIRMED-LO/C TAKING CORRECTIVE ACTION WITH VENDOR TO CORRECT DISCREPANCY.							
PNEUMATIC-A/D TANK PRESS	AP80-0130/P2-48N-03-55	COMPOSITE-FAB/DPL	550 800321	18	NO YES		988808
FAILURE MODE-CONTAMINATION. FUEL TANK PRESSURIZING SYSTEM WAS CONTAMINATED WITH FUEL AS A RESULT OF FUEL BEING OVER TANKED APPROXIMATELY 120 TO 130 GALLONS.							
SYSTEM EFFECT-CONTAMINATION.							
VEHICLE EFFECT-COMPOSITE AND TANKING DELAYED AND RESCHEDULED.							
CORRECTIVE ACTION-LINES AND COMPONENTS REMOVED, CLEANED AND REINSTALLED OR REPLACED. PURGED COMPONENTS AND LINES W ICH WERE LEFT INSTALLED.							
PNEUMATIC-A/B TANK PRESS	98-08-187 BENZINE LINE SHUTOFF VALVE	FAR 27-08403-3	550 800317	ETR	YES NO	ON-WARE	
FAILURE MODE-FAIL DURING OPERATION-UNIT REJECTED BECAUSE THE TURNING KEY COULD NOT BE REMOVED. THE KEY WAS TWISTED IN THE VALVE AS RESULT OF NOT DEPRESSING THE KEY BEFORE IT WAS TURNED.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	URI 3TH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-A SECOND SOURCE FOR THE VALVE IS BEING SOUGHT. THE ITEM VALVE WILL REMAIN UNDER SURVEILLANCE FOR ANY FAILURES BY UNITS FABRICATED AFTER 18/01/59.						006340
PNEUMATIC-A/B TANK PRESS	98-08-183 FUEL TANK PRESSURE REGULATOR DIAPH 27-80400-3 RACH	FAR 27-80400-3	56D 600310	ETR	NO	LB STRATOR	006341
FAILURE MODE-INTERNAL LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE THROUGH THE TANK SENSING CONTROLLER. THE DIAPHRAGM WAS FOUND LEAKING PAST THE RETAINING RIVETS WITH THE DIAPHRAGM RESTRAINED FROM BALLOONING.							
CORRECTIVE ACTION-THE VENDOR NOW CHECKS FOR LEAKAGE WITH THE DIAPHRAGM BALLOONED AND RESTRAINED.							
PNEUMATIC-A/B TANK PRESS	98-08-189 STAGING DISCONNECT	FAR 27-08128-3	58D 600307	ETR	YES B.M. MADLEY NO		006339
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR INTERNAL LEAKAGE FROM A CRACK BETWEEN THE MOUNTING FLANGE AND THE THREAD UNDERCUT. LEAKAGE NOT CONFIRMED, HOWEVER, IT WAS CRACKED.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. VENDOR AND COGNIZANT GO/C PERSONNEL ADVISED OF FAILURE OF VALVE AND SEAL MATERIALS. NO FURTHER ACTION.							
PNEUMATIC-A/B TANK PRESS	DA164	COMPOSITE-FRO/DPL 19C 600305	A-1	YES NO			006311
FAILURE MODE-FAIL DURING OPERATION-PNEUMATIC SYSTEM FAILED TO MAINTAIN FUEL TANK PRESSURE AT A SATISFACTORY LEVEL. REASON FOR FAILURE WAS NOT DETERMINED.							
SYSTEM EFFECT-OPERATION TO LOW, RESULTING IN LOSS OF FUEL TANK PRESSURE.							
VEHICLE EFFECT-LOSS OF VEHICLE INTEGRITY. LOSS OF FUEL TANK PRESSURE RESULTED IN COLLAPSE OF INTERMEDIATE BULKHEAD FOLLOWED BY A LOW ORDER DETONATION AND A SEVERE FUEL FIRE WHICH CULMINATED IN TOTAL DESTRUCTION OF THE MISSILE AND SEVERE FACILITY DAMAGE.							
CORRECTIVE ACTION-NONE-VEHICLE WAS MAINTAINED BY SAC. THE DPL WAS CONDUCTED BY SAC, DURING A TIME THE VEHICLE WAS ON EMERGENCY WIR ORDERS. ANY CORRECTIVE ACTION IMPLEMENTED BY SAC IS NOT AVAILABLE.							
PNEUMATIC-A/B TANK PRESS	98-08-189 TANK PRESSURE CHECK VALVE	FAR 27-08114-1	8D 600300	WTR	YES B.M. MADLEY NO		
FAILURE MODE-TWO UNITS WERE REJECTED FOR INTERNAL LEAKAGE WHILE INSTALLED DURING A SYSTEM CHECK. BOTH VALVES WERE FOUND CONTAMINATED WITH METAL PARTICLES.							

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SYSTEM 3U-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-THE CONTAMINATION WAS CONSIDERED TO ORIGINATE IN THE GROUND SYSTEM. ACTION WAS TAKEN TO INSTALL FILTERS IN THE GROUND SYSTEM.							000423
PNEUMATIC-A/B TANK PRESS	00-09-181 FUEL TANK PRESSURE REGULATOR	FAR 27-08246-5	380 800300	SYCAMORE	YES B.N.	HADLEY NO	000547
FAILURE MODE-ERRATIC OPERATION- TWO UNITS REJECTED FOR CAUSING TANK PRESSURE OSCILLATIONS BETWEEN 50 AND 42.9 PSIG.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. THEREFORE NO MEANINGFUL CORRECTIVE ACTION CAN BE TAKEN.							
PNEUMATIC-A/B TANK PRESS	90-08-150 TANK PRESSURE SENSING LINE ECT, SEAL	FAR 27-08129-1	290 800300	ETR	YES	ROBERTSMAN NO TOM	004943
FAILURE MODE-INTERNAL LEAK. FOUR UNITS WERE REJECTED. ONE EACH FROM 290, 400, 420 AND 430. FOR INTERNAL LEAKAGE. TWO UNITS LEAKED BEYOND LIMITS DUE TO A MISSING PROBE SEAL IN ONE CASE, AND A LOOSE PROBE COLLAR IN THE SECOND CASE. A LEAKAGE OF THE OTHER TWO UNITS WAS WITHIN SPEC., HOWEVER, BOTH WERE CONTAMINATED WITH METAL AND WOOD CHIPS, WHICH COULD HAVE CAUSED THE LEAKAGE AT REJECTION.							
CORRECTIVE ACTION-60/C INITIATED ACTION TO IMPROVE QUALITY CONTROL ON THESE ITEMS.							
PNEUMATIC-A/B TANK PRESS	AERO-0040/P5-402-00-49 LOX TANK PRESSURE SENSING LINE	FLIGHT	490 800211	13 139.32	YES NO		007617
FAILURE MODE-LEAK-EXTERNAL. THE LOX TANK PRESSURE SENSING LINE WAS DAMAGED AT THE START OF BOOSTER JETTISON. SYSTEM EFFECT-DEPLETION OF GAS SUPPLY LOX TANK PRESSURE DROPPED FROM 28.1 TO 12.1 PSIG BETWEEN 139.320 SECONDS AND 139.332 SECONDS. THE PRESSURE DID NOT RECOVER.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-CLARIFY ATTACHMENT OF LINES TO FUEL TANK IN AREA OF POSSIBLE BOOSTER JETTISON INTERFERENCE.							
PNEUMATIC-A/B TANK PRESS	9A-08-150 BOIL-OFF VALVE/SOLENOID	FAR 27-80750-803	370 800200	EDWARDS	YES	60/C NO	
FAILURE MODE-FAIL DURING OPERATION. UNIT WAS REJECTED, AFTER A COMPLETE LIFE CYCLE OF TESTING ON VEHICLES 240 AND 370. FOR FAILURE OF THE VALVE ACTUATING SOLENOID TO ENERGIZE ON SEVERAL OCCASIONS. THE IMPINGED TYPE LUBRICANT AND THE NICKEL PLATING WAS WORN OFF THE WORKING AREA OF THE SOLENOID PLUNGER. THE LUBRICANT HAD BEEN IMPROPERLY APPLIED.							

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S-STEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF OTH	PRI VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-THE LUBRICANT VENDOR REQUESTED THE PLUNGER BE GLASS BEAD MONED PRIOR TO PLATING, TO ALLOW PROPER ADHERENCE OF THE LUBRICANT. THE ABOVE REQUEST WILL BE IMPLEMENTED.					
PNEUMATIC-A/B TANK PRESS	90-06-160 LOX TANK PRESSURE REGULATOR-DIAPHM 27-08248-3 ACM	FAR	600800 9768	YES B.N. MADLEY NO	000046
FAILURE MODE-INTERNAL LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE TO THE TANK SENSE LINE. THE TANK SENSING DIAPHRAGM WAS BURSTED DUE TO BEING OVER PRESSURED TO APPROXIMATELY 100 PSIG. A SECOND UNIT WAS SIMILARLY AFFECTED.					
CORRECTIVE ACTION-PROBLEM WAS WTR PECULIAR. TEST PROCEDURE WAS REVISED TO PRECLUDE RECURRENCE.					
PNEUMATIC-A/B TANK PRESS	90-06-160 LOX TANK PRESSURE REGULATOR-DIAPHM 27-08101-9 ACM	FAR	600800 9738	YES B.N. MADLEY NO	000046
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE OF GAS TO THE TANK SENSE LINE. THE TANK PRESSURE SENSING DIAPHRAGM WAS BURSTED DUE TO BEING OVER PRESSURIZED TO APPROXIMATELY 100 PSIG.					
CORRECTIVE ACTION-PROBLEM WAS PECULIAR TO WTR. TEST PROCEDURE WAS REVISED SO THAT WHENEVER THE VEHICLE TANKS ARE ISOLATED THE SHUT-OFF VALVES AT THE DCU TANK ARE OPENED, ALLOWING CONCURRENT PRESSURIZING THE VEHICLE TANK PRESSURIZATION DUCT AND THE TANK SENSING LINE. THIS WILL PREVENT EXCESSIVE DIFFERENTIAL PRESSURE ACROSS ANY REGULATOR DIAPHRAGM.					
PNEUMATIC-A/B TANK PRESS	90-06-160 FUEL TANK PRESSURE REGULATOR/DIAPHM 27-08248-3 RACH	FAR	600800 WTR	YES B.N. MADLEY NO	000046
FAILURE MODE-INTERNAL LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE TO THE TANK SENSE LINE. THE TANK SENSING DIAPHRAGM WAS BURSTED DUE TO BEING OVER PRESSURED TO APPROXIMATELY 100 PSIG. A SECOND UNIT WAS SIMILARLY AFFECTED.					
CORRECTIVE ACTION-PROBLEM IS WTR PECULIAR. TEST PROCEDURE WAS REVISED TO PRECLUDE RECURRENCE.					
PNEUMATIC-A/B TANK PRESS	90-06-160 FUEL TANK PRESSURE REGULATOR-DIAPHM 27-08102-7 RACH	FAR	600800 9768	YES B.N. MADLEY NO	000046
FAILURE MODE-INTERNAL LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE TO THE TANK SENSE LINE. THE TANK SENSING DIAPHRAGM WAS BURSTED DUE TO BEING OVER PRESSURED TO APPROXIMATELY 100 PSIG. A SECOND UNIT WAS SIMILARLY AFFECTED.					

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SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-PROBLEM IS NOT PECULIAR. TEST PROCEDURE WAS REVISED TO PRECLUDE RECURRENCE.						
PNEUMATIC-A/B TANK PRESS	98-08-157 STAGING DISCONNECT/SEAL	FAR 27-08122-1-3	44D 600200	ETR	YES NO	B.H. MADLEY
FAILURE MODE-LEAK-EXTERNAL. THREE UNITS, TWO -3 AND ONE-1 WERE REJECTED FOR LEAKAGE. ONE-3 FAILED DUE TO A FRACTURE OF REAR SEAL- THE LEAKAGE OF THE SECOND-3 WAS WITHIN LIMITS ALTHOUGH IT COULD HAVE BEEN BEYOND LIMITS PRIOR TO REJECTION. THE-1 PROBE WAS CONTAMINATED WITH HARDENED OXYLUBE, WHICH COULD NOT BE WIPED OFF. ALL THREE PARTS WERE CONTAMINATED TO SOME EXTENT WITH SEMI-HARD OXYLUBE.						
CORRECTIVE ACTION-60/C HAD ISSUED INSTRUCTIONS ON THE PROPER APPLICATION OF OXYLUBE ON JAN 15, 1966. REC-7 MATERIAL PROBLEMS ARE UNDER INVESTIGATION.						
PNEUMATIC-A/B TANK PRESS	98-08-155 MELTUM SPHERE RUPTURE DISC	FAR 27-08217-1	31D 600200	ETR	YES NO	FIRE METAL PRO
FAILURE MODE-STRUCTURAL-TWO DISCS, THE ORIGINAL AND ITS REPLACEMENT, FAILED AT 3150 PSIG. SPEC. REQUIREMENT IS 3600 PSIG. ALL RUPTURE DISCS WERE MADE FROM THE SAME SHEET OF MATERIAL AND FROM LOT 1. NO MATERIAL DEFECT COULD BE FOUND IN A PIECE OF ONE FAILED DISC, NOR IN THE NEW DISCS. FOUR NEW DISCS, FROM LOT 1, RUPTURED WITHIN SPEC.						
CORRECTIVE ACTION-60/C ISSUED INSTRUCTIONS TO INCREASE INSPECTION FOR HANDLING DAMAGE PRIOR TO AND DURING INSTALLATION.						
PNEUMATIC-A/B TANK PRESS	98-08-154 LGE TANK RELIEF VALVE/DIAPHRAGM	FAR 7-08210-3	31D 600200	ETR	YES NO	B.H. MADLEY
FAILURE MODE-EXTERNAL LEAK. TWO UNITS REJECTED FOR EXTERNAL LEAKAGE FROM THE PRIMARY CONTROLLER VENT. DURING TEST, LEAKAGE WAS NOTED FROM THE SECONDARY CONTROLLER VENT. RUBBER AND METAL PARTICLES WERE FOUND BELOW THE DIAPHRAGM ON ONE VALVE, AND, IN THE SECOND VALVE, SEVERAL SMALL PARTICLES WERE FOUND ON EITHER SIDE OF THE PRIMARY CONTROLLER DIAPHRAGM.						
CORRECTIVE ACTION-60/C CONTACTED VENDOR ON THIS CONTAMINATION PROBLEM FOR HIS CORRECTIVE ACTION.						
PNEUMATIC-A/B TANK PRESS	98-08-153 PNEUMATIC STAGING DISCONNECT	FAR 27-08122-3	29D 600200	ETR	YES NO	B.H. MADLEY
FAILURE MODE-CONTAMINATION. UNIT WAS REJECTED FOR EVIDENCE OF CONTAMINATION UNDER BLACK LIGHT, PRIOR TO INSTALLATION. THE GRANULAR PARTICLES FOUND MIDWAY BETWEEN THE SEALS WERE BETWEEN 30 TO 100 MICRONS IN SIZE. SPECIFICATION PERMITS PARTICLES UP TO 275 MICRONS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SIZE TIME DIP	PHI VENDOR PART NO	VENDOR NAME VENDOR PART NO
	CORRECTIVE ACTION-VENDOR INDICATED HE WOULD REVIEW HIS CLEANING PROCEDURES, EVEN THOUGH THE PART WAS WITHIN SPECIFICATION.					
PNEUMATIC-A/B TANK PRESS	90-118-132 MENSELINE SHUTOFF VALVE, SEAL	FAR 27-06403-3	280 900500	ETR	YES NO	YES ON-MARK NO
	FAILURE MODE-EXTERNAL LEAK. UNIT REJECTED FOR EXTERNAL LEAKAGE DURING SYSTEM LEAK CHECK. DURING TEST THE VALVE LEAKED SEVERELY IN BOTH OPEN AND CLOSED POSITION. THREE RUBBER PARTICLES WERE FOUND IN THE O-RING AREA. AFTER CLEANING A NO REASSEMBLY THERE WAS NO LEAKAGE.					
	CORRECTIVE ACTION-ASSEMBLY INSPECTION HAS BEEN INCREASED BY VENDOR. EXCESS RUBBER FLAMM WILL BE TRIMMED FROM THE SEAL.					
PNEUMATIC-A/B TANK PRESS	ACBU-0003/91-411-CP-36 PRESSURE CONTROL UNIT, REGULATOR	CAPTIVE	360 900121	51 -38	NO NO	
	FAILURE MODE-OUT OF TOLERANCE. WHEN THE PNEUMATIC SYSTEM WAS SWITCHED FROM GROUND TO INTERNAL A LARGE TRANSIENT WAS NOTED IN LOX TANK-PRESSURE. THE PCU REGULATOR HAD DRIFTED BELOW ITS ORIGINAL SETTING ALLOWING THE PCU TO REGULATE THE LOX TANK PRESSURE AT A LOWER LEVEL THAN THE SETTING OF THE AIRBORNE REGULATOR.					
	SYSTEM EFFECT-NONE. THE AIRBORNE SYSTEM PROPERLY RAISED THE LOX TANK PRESSURE TO THE SETTING OF THE AIRBORNE REGULATOR.					
	VEHICLE EFFECT-NONE.					
	CORRECTIVE ACTION-NONE.					
PNEUMATIC-A/B TANK PRESS	90-38-184 BOILOFF VALVE CONTROLLER-BELLOWS	FAR 27-06112-15	230 900116	WTR	YES NO	YES STEWART MARKER NO
	FAILURE MODE-FAIL DURING OPERATION- UNIT REJECTED FOR FAILURE TO OPEN VALVE AT 2.83 PSIG. CONTROLLER OPERATED SATISFACTORILY AT AMBIENT TEMPERATURES, BUT WAS ERRATIC AFTER BEING CHILLED TO -97 DEGREES F. IT WAS DETERMINED THAT FROST ON THE BELLOWS SURFACE CAN CHANGE THE CALIBRATION.					
	CORRECTIVE ACTION-60/6 AND AIR FORCE ARE CONSIDERING REPLACEMENT OF THIS VALVE WITH PART 27-06750, WHICH IS A NEW PROPERT STYLE CONTROLLER.					

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-148 TANK PRESSURE REGULATOR/DIAPHRAGM	FAR 27-08848-3	320 600100	WTR	YES NO	HADLEY	000902
FAILURE MODE-LEAK EXTERNAL THROUGH VENT PORT DUE TO A PUNCTURED METERING VALVE CONTROL DIAPHRAGM, CAUSE OF PUNCTURE WAS IMPROPER INSTALLATION.							
CORRECTIVE ACTION-VENDOR NOW USING SPECIAL TEFLON TOOL FOR INSERTING AND POSITIONING DIAPHRAGMS. FAILED UNIT MANUFACTURED PRIOR TO INCORPORATION OF THIS TOOL.							
PNEUMATIC-A/B TANK PRESS	98-08-145 BOIL-OFF VALVE CONTROLLER ADJUSTIN S NUT	FAR 27-08152-15	200 600100	ETR	YES NO	STEWART WARNER	000471
FAILURE MODE-FAIL DURING OPERATION-UNIT REJECTED FOR FAILING TO CONTROL BOIL-OFF VALVE DURING FIRST VEHICLE CHECKOUT. EXAMINATION REVEALED THE ADJUSTING NUT ON THE TANK SIDE OF THE BOLLONS WAS VERY LOOSE. READJUSTING THE NUT PROVIDED PROPER OPERATION OF THE CONTROLLER.							
CORRECTIVE ACTION-60/C INITIATED ACTION TO INSTALL A LOCK NUT TO PREVENT LOOSENING OF THE ADJUSTING NUT.							
PNEUMATIC-A/B TANK PRESS	98-08-146 PNEUMATIC STAGING DISCONNECT/SEALA NT	FAR 27-08123-3	150 600100	ETR	YES NO	B.H.HADLEY	000470
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR AN AUDIBLE LEAK DURING LEAK CHECK. THE LEAK WAS CAUSED BY HARDENED OR TUBES ON THE MATING SURFACES AND THE HEL-F LIP SEAL.							
CORRECTIVE ACTION-60/C DISCONTINUED USE OF OXYLUKE IN DEC. 1959, HOWEVER, THE AIR FORCE REVERSED THE DECISION. THE DISCONNECT WAS ELIMINATED ON VEHICLE 330 AND ON.							
PNEUMATIC-A/B TANK PRESS	98-08-147 HELIUM CHANGEOVER VALVE/POPPET	FAR 27-08158-11	600100	ETR	YES NO	ROBERTMAN FUL TON	000423
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR CONTAMINATION ON THE POPPET. CONTAMINANT FOUND UNDER BLACK LIGHT IN THE MECHANICAL LAB. AT ETR. THERE WAS INSUFFICIENT MATERIAL FOR MATERIAL ANALYSIS. IT WAS CONCLUDED THE VALVE WOULD HAVE FUNCTIONED SATISFACTORILY.							
CORRECTIVE ACTION-NONE-NOT CONSIDERED A FAILURE.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-151 FUEL TANK RELIEF VALVE/POPPET	FAR 7-08219-3	200 600100	ETR	YES NO	YES B.M. MADLEY	090364
FAILURE MODE-OUT OF SPECIFICATION. UNIT REJECTED FOR FAILURE TO RELIEVE AT 64 PSIG. TWO METAL CHIPS WERE FOUND IN THE SECONDARY CONTROLLER POPPET CHAMBER BELOW THE DIAPHRAGM. UPON REMOVAL OF THE CHIPS AND CLEANING THE PARTS THE VALVE OPERATED PROPERLY.							
CORRECTIVE ACTION-VENDOR NOTIFIED OF THE CONTAMINATION IN THE SECONDARY CONTROLLER FOR HIS CORRECTIVE ACTION.							
PNEUMATIC-A/B TANK PRESS	98-08-150 BOIL-OFF VALVE PLUG WIRE	FAR 27-80588-821	200 600100	ETR	YES NO	YES STEWART WARNER	090363
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FOR FAILURE TO ACTUATE DESPITE PROPER OPERATION ON PREVIOUS TANK TESTS. ELECTRICAL CHECK REVEALED A COLD SOLDERED WIRE IN THE MALE PLUG WHICH CAUSED INTERMITTENT OPERATION OF THE VALVE.							
CORRECTIVE ACTION-60/C TOOK ACTION TO INSURE PROPER ELECTRICAL CONNECTIONS. VENDOR WAS NOTIFIED.							
PNEUMATIC-A/B TANK PRESS	98-08-149 BOIL-OFF VALVE CONTROLLER MOTOR	FAR 27-80588-821	250 600100	WTH	YES NO	YES STEWART WARNER	090362
FAILURE MODE-LEAK-UNIT REJECTED FOR SEVERE INTERNAL LEAKAGE DURING THREE LOX TANKINGS. THE VALVE SEALED AFTER BEING CYCLED SEVERAL TIMES IN EACH CASE. THE BUTTERFLY WAS OVERTRAVELING THE FULL CLOSED POSITION. THE MOTOR ARMATURE WAS SHORTED ACROSS TWO COMMUTATOR SEGMENTS BY A PIECE OF METAL. MOTOR BRUSHES WERE FITTED.							
CORRECTIVE ACTION-60/C NOTIFIED THE VENDOR OF THE PROBLEM TO HELP AVERT SIMILAR FAILURES.							
PNEUMATIC-A/B TANK PRESS	98-08-128 MANUAL SHUTOFF VALVE-SEAL	FAR 27-05179-3	220 600100	ETR	YES NO	YES ROBERTSHAW FUL MO TON	091745
FAILURE MODE-LEAK INTERNAL THROUGH BUTTERFLY SEAL GIVING ESTIMATED PRESSURE DECREASE OF ONE PSIG PER MIN. WAS DUE TO O SEAL MATERIAL NOT BEING COMPATIBLE WITH RP1 FUEL AND FUMES. FUMES CAUSED SEAL TO SNEEL RESULTING IN BUTTERFLY CRYSTALIZATION AND SUBSEQUENT LEAKAGE.							
CORRECTIVE ACTION-A FUEL COMPATIBLE VALVE WAS FABRICATED. THE NEW DESIGN IS UNDER QUALIFICATION TESTING.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	P31 OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	8-1819/3-409-87-38 REGULATOR/INLET DUCT, SEAL	CAPTIVE	380 891221	81	YES YES		899099
<p>FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. TEMPERATURE AT THE LOX TANK PRESSURE REGULATOR INLET WAS VERY HIGH IN COMPARISON TO PREVIOUS TESTS. THIS WAS ATTRIBUTED TO NOT COMPLETELY FILLING THE BOOSTER TANK HELIUM BOTTLES BEFORE WITH LNE.</p> <p>SYSTEM EFFECT-HIGH TEMPERATURE ENVIRONMENT. THE HELIUM TEMPERATURE WAS HIGHER THAN NORMAL.</p> <p>VEHICLE EFFECT-NONE</p> <p>CORRECTIVE ACTION-UNKNOWN</p>							
PNEUMATIC-A/B TANK PRESS	98-08-118 DISCONNECT COUPLING - TANK SENSING 27-08129-3 O-RING	FAR	991200	ETR	YES NO	ROBERT SHAW PUL MO LTON	899082
<p>FAILURE MODE-LEAK-LEARNED BEYOND SPECIFICATION TOLERANCE OF 25 CUBIC INCHES/MIN. WHICH WAS CAUSED BY HARD KEL-F SEAL MATERIAL.</p> <p>CORRECTIVE ACTION-STUDY INITIATED TO DETERMINE IF EXCESSIVE SEAL HARDNESS IS INCURRED DURING MANUFACTURE OR RESULTS FROM USE OR AGING.</p>							
PNEUMATIC-A/B TANK PRESS	98-08116 TANK SENSING RISOFF DISCONNECT, 8 27-08129-1 EAL	FAR	991200	ETR	YES NO	ROBERT SHAW PUL MO TON	897932
<p>FAILURE MODE-LEAK INTERNAL AT 25 CUBIC INCHES/MIN. WHICH WAS CAUSED BY HARD KEL-F SEAL MATERIAL.</p> <p>CORRECTIVE ACTION-STUDY INITIATED TO DETERMINE IF EXCESSIVE SEAL HARDNESS IS INCURRED DURING MANUFACTURE OR RESULTS FROM USE OR AGING.</p>							
PNEUMATIC-A/B TANK PRESS	98-08-134 DISCONNECT STAGING-TANK PRESS-O-RING 27-08124-3 ING	FAR	220 991200	ETR	YES NO	B.M. MADLEY	897303
<p>FAILURE MODE-LEAK-EXTERNAL-LEAKAGE REPORTED DURING FIRST PRESSURIZATION CHECKS ON MISSILE 220. POSSIBLY CAUSED BY DRIED SEAL LUBRICANT.</p> <p>CORRECTIVE ACTION-FAILURE NOT CONFIRMED. FAILURE COULD NOT BE DUPLICATED. USE OF LUBRICANTS ON DISCONNECT FITTINGS TO BE MONITORED BY 60/C.</p>							

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GENERAL CLINICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-139 TANK PRESSURE CHECK VALVE-O-RING	FAR 27-08114-1	139 591200	ETR	YES NO	B.H. MADLEY	007502
FAILURE MODE-LEAK-EXTERNAL. LEAKAGE BETWEEN VALVE BODY AND END CAP CAUSED BY NICKED O-RINGS.							
CORRECTIVE ACTION- VENDOR REVIEWED ASSEMBLY PROCEDURES AND IMPLEMENTED CORRECTIVE ACTION BY MORE STRINGENT QUALITY CONTROL.							
PNEUMATIC-A/B TANK PRESS	98-08-141 BOIL-OFF VALVE/MOTOR	FAR 27-80380-021	220 591200	ETR	YES NO	STEWART WARNER	006400
FAILURE MODE-EXTERNAL LEAK. UNIT REJECTED FOR A SLOW DECAY IN TANK PRESSURE AFTER A TANKING TEST. VALVE BUTTERFLY WENT PART CLOSED POSITION BEFORE STOPPING. A REPLACEMENT MOTOR ALLOWED PROPER VALVE OPERATION. THE ORIGINAL MOTOR WAS FOUND TO HAVE WEAR PERMANENT MAGNETS, WHICH PREVENTED REQUIRED BRAKING.							
CORRECTIVE ACTION-60/C TOOK NECESSARY STEPS TO INSURE GOOD MAGNETS ARE USED IN EXISTING BOILOFF VALVES. REMOVAL OF MOTOR REQUIRING REMOVAL OF MAGNETS WILL BE DONE BY VENDOR.							
PNEUMATIC-A/B TANK PRESS	98-08-139 RELIEF VALVE VENT DUCT-STAGING DIS CONNECT	FAR 27-08203-7-11	340 591200	SYCAMORE	YES NO	60/C	004329
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR FAILURE TO SEPARATE WHEN DENATINGS THE VEHICLE. THE TWO VALVES WERE BOILED TOGETHER BY DRIED ORTLUBE LUBRICANT.							
CORRECTIVE ACTION-60/C INITIATED ACTION TO PURGE ALL ORTLUBE IN THE FACTORY IN FAVOR OF IMPECCO 33. HOWEVER, THE AF DIRECTED THE USE OF ORTLUBE 60/C PERSONNEL THEN WERE TRAINED IN THE PROPER APPLICATION OF ORTLUBE.							
PNEUMATIC-A/B TANK PRESS	98-08-139 TANK PRESSURE CHECK VALVE, SEAL	FAR 27-08114-1	139 591200	ETR	YES NO	B.H. MADLEY	004320
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE. THE O-RING BETWEEN THE VALVE BODY AND END CAP WAS BADLY NICKED.							
CORRECTIVE ACTION-VENDOR INVESTIGATED ASSEMBLY PROCEDURES FOR CAUSE OF O-RING DAMAGE. CORRECTIVE ACTION WILL BE IMPLEMENTED.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SIZE TIME DIF	PRI DIF	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-134 TANK PRESSURIZATION STAGING DISCON NECT	FAR 27-08124-3	220 391200	ETR	YES NO	B.M. MADLEY	084325
FAILURE MODE-LEAK-EXTERNAL. UNIT WAS REJECTED FOR LEAKAGE DURING THE FIRST PRESSURE CHECKS ON THE VEHICLE. FAILURE WAS NOT CONFIRMED. ALTHOUGH, IT MAY HAVE BEEN CAUSED BY DRIED OXYGEN, THE SEAL OF WHICH FAILS AT FIRST MOVEMENT. A SIMILAR PROBLEM WAS REPORTED ON FAR 9A-08-114.							
CORRECTIVE ACTION-RECOMMENDED OXYGEN NOT BE USED ON RISE-OFF OR STAGING DISCONNECTS.							
PNEUMATIC-A/B TANK PRESS	90-08-136 BOIL-OFF VALVE	FAR 27-80368-821	391123	VTR	NO NO	STEWART WARNER	084326
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE TO OPEN DURING THE FIRST DRY CHECKOUT AFTER INSTALLATION. AN ELECTRICAL CHECK INDICATED PINS AND C OF PLUG 1807 WERE GROUNDED SINCE THE CIRCUIT BREAKER TRIPPED AS POWER WAS APPLIED. THE VALVE HAD PERFORMED SATISFACTORILY FOR 73 CYCLES PRIOR TO THIS INSTALLATION.							
CORRECTIVE ACTION-MODE-FAILURE. CONSIDERED TO BE IN THE GROUND INSTALLATION.							
PNEUMATIC-A/B TANK PRESS	90-08-137 LOX TANK PRESSURE REGULATOR AP	FAR 27-08245-3	230 391321	VTR	YES NO	B.M. MADLEY	084327
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR REGULATING OUT OF LIMITS. THE UNIT OPERATED PROPERLY AFTER REMOVAL OF THE VENT DUST CAPS.							
CORRECTIVE ACTION-60/C NOTIFIED ALL BARES TO REMOVE THE DUST CAPS PRIOR TO OPERATION.							
PNEUMATIC-A/B TANK PRESS	98-08-170 BOIL-OFF VALVE CONTROLLER SWITCH	FAR 27-08112-15	200 391118	ETR	YES NO	STEWART WARNER	084342
FAILURE MODE-FAIL DURING OPERATION- UNIT REJECTED FOR FAILURE TO CLOSE THE BOIL-OFF VALVE AT AMBIENT TEMPERATURE. SWITCH CONTACTS WERE FOUND FUSED.							
CORRECTIVE ACTION-60/C REQUESTED THAT THIS VALVE BE REPLACED BY NEW POPPET STYLE CONTROLLER, PART 27-80780.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP TIME	SITE DIP TIME	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	90-08-182 MANUAL SHUTOFF VALVE	FAR 27-00108-3	8D 901100	WTR	YES NO	ROBERTSON FUL TON	008543
FAILURE MODE-FAIL DURING OPERATION- UNIT REJECTED FOR FAILURE TO OPEN. THE RIVETS ATTACHING THE BUTTERFLY TO THE SH APT WERE SHEARED, CAUSED BY THE BUTTERFLY SEAL ADHERING TO THE WALL OF THE VALVE.							
CORRECTIVE ACTION-50/C HAS A NEW DESIGN IN QUALIFICATION, TO BE AVAILABLE BY APRIL 15, 1966.							
PNEUMATIC-A/B TANK PRESS	90-08-136 BOIL-OFF VALVE	FAR 27-00308-021	25D 501100	WTR	YES NO	STEWART WARNER	007023
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- VALVE FAILED TO OPEN.							
CORRECTIVE ACTION-NO RECOMMENDATION-FAILURE NOT VERIFIED.							
PNEUMATIC-A/B TANK PRESS	90-08-132 SOLENOIDOPER-CHECKVALVE-HELIUMSEAL ANT	FAR 27-00117-9	21D 501100	WTR	YES NO	INTERSTATE ENG CO.	007400
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. EXCESSIVE HEL-F GREASE USED DURING HELIUM PANEL ASSEMBLY PREVENTED VALVE FROM ACTUATING.							
CORRECTIVE ACTION-HELIUM PANEL TO BE ASSEMBLED WITH A MINIMUM OF LUBRICATION.							
PNEUMATIC-A/B TANK PRESS	90-08-132 HELIUM PRESSURIZATION PANEL ASSEMBLY LY	FAR 27-00064-19	21D 501100	WTR	YES NO	ED/CONVAIR	007407
FAILURE MODE-CONTAMINATION-EXCESS HEL-F GREASE USED DURING ASSEMBLY WHICH BECAME LODGED IN SOLENOID VALVE 27-00117- 9.							
CORRECTIVE ACTION-HELIUM PANEL TO BE ASSEMBLED WITH A MINIMUM OF LUBRICATION.							
PNEUMATIC-A/B TANK PRESS	90-08-133 FUEL TANK PRESSURE REGULATOR-SEAL	FAR 27-00248-3	501100	STC/MORE	YES NO	B.H. MADLEY	
FAILURE MODE - LEAK EXTERNAL. LEAK THROUGH PUNCTURED REGULATING VALVE POSITION CONTROL DIAPHRAGM. AS A RESULT OF BE ING PINCHED DURING VENDOR INSTALLATION.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
							097499
CORRECTIVE ACTION - VENDOR TO USE SPECIAL TOOL TO INSERT AND POSITION DIAPHRAGMS.							
PNEUMATIC-A/B TANK PRESS	9A-08-131 LO2 BOILOFF VALVE CONTROLLER, SWITCH CM	FAR P7-08112-15	370 591100	EDWARDS	YES NO	STEWART WARNER	096425
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FIVE CONTROLLERS REJECTED DUE TO FAILURE TO OPEN/CLOSE BOILOFF VALVE. RESULTED FROM HIGH LIMIT SWITCH FAILING TO ACTIVATE OR DEACTIVATE DUE TO TEMPERATURE HUMIDITY EFFECTS OR INEFFICIENT LINKAGE.							
CORRECTIVE ACTION-A RETROFIT ON NSL 130 WITH DOUBLE IN SERIES, BOILOFF VALVE. NEW POPPET TYPE PNEUMATICALLY OPERATED VALVE TO BE INSTALLED ON NSL 240 AND 370. VENDOR TO REDESIGN PRESSURE CONTROLLER FOR BETTER OPERATING CHARACTERISTICS. THIS UNIT NOT USED ON SUBSEQUENT MISSILES.							
PNEUMATIC-A/B TANK PRESS	9A-09-131 LO2BOILOFFVALVECONTROLLER,SWITCH	FAR P7-08112-7	240 591100	EDWARDS	YES NO	STEWART WARNER	096421
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CONTROLLER REJECTED DUE TO FAILURE TO OPEN/CLOSE BOILOFF VALVE DURING LO2 TANKING. CAUSED BY HIGH LIMIT SWITCH FAILING TO ACTIVATE OR DEACTIVATE DUE TO TEMPERATURE HUMIDITY EFFECTS OR INEFFICIENT LINKAGE.							
CORRECTIVE ACTION-A RETROFIT ON NSL 130 WITH DOUBLE, IN SERIES, BOILOFF VALVE. NEW POPPET TYPE PNEUMATICALLY OPERATED VALVE TO BE INSTALLED ON NSL 240 AND 370. VENDOR TO REDESIGN PRESSURE CONTROLLER FOR BETTER OPERATING CHARACTERISTICS. THIS UNIT NOT USED ON SUBSEQUENT MISSILES.							
PNEUMATIC-A/B TANK PRESS	9A-08-131 LO2BOILOFFVALVECONTROLLER,SWITCH	FAR P7-08112-15	370 591100	EDWARDS	YES NO	STEWART WARNER	096420
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CONTROLLERS REJECTED DUE TO FAILURE TO OPEN/CLOSE BOILOFF VALVE. A RESULTED FROM HIGH LIMIT SWITCH FAILING TO ACTIVATE OR DEACTIVATE DUE TO TEMPERATURE HUMIDITY EFFECTS OR INEFFICIENT LINKAGE.							
CORRECTIVE ACTION-A RETROFIT ON NSL 130 WITH DOUBLE IN SERIES, BOILOFF VALVE. NEW POPPET TYPE PNEUMATICALLY OPERATED VALVE TO BE INSTALLED ON NSL 240 AND 370. VENDOR TO REDESIGN PRESSURE CONTROLLER FOR BETTER OPERATING CHARACTERISTICS. THIS UNIT NOT USED ON SUBSEQUENT MISSILES.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

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PNEUMATIC-A/B TANK PRESS	9A-08-131 LOE BOILOFF VALVE CONTROLLER, SWITCH CH	FAR 27-80388-021	370 591100	EDWARDS	YES NO	STEWART WARNER	806482
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. TWO VALVES (27-80388-021) REJECTED DUE TO FAILURE OF THE BOILOFF VALVE TO OPEN/CLOSE. CONCLUSIONS REVEALED THESE VALVES DID NOT CONTRIBUTE TO FAILURE AS FAILURE RESULTED FROM HIGH LIMIT SWITCH IN CONTROLLER FAILING TO ACTUATE OF DEACTUATE.							
CORRECTIVE ACTION-RETROFIT NSL 130 WITH DOUBLE BOILOFF VALVE, EFFECTIVE THRU 350. NEW POPPET TYPE PNEUMATICALLY OPERATED VALVE TO BE INSTALLED ON NSL 240 AND 370. VENDOR TO REDESIGN PRESSURE CONTROLLER FOR BETTER OPERATING CHARACTERISTICS. THIS UNIT NOT USED ON SUBSEQUENT MISSILES.							
PNEUMATIC-A/B TANK PRESS	9A-08-131 LOE BOILOFF VALVE CONTROLLER, SWITCH	FAR 27-06112-15	170 591100	EDWARDS		STEWART WARNER	806486
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CONTROLLERS REJECTED WHEN BOILOFF VALVE FAILED TO OPEN/CLOSE. RESULTED FROM HIGH LIMIT SWITCH FAILING TO ACTUATE OR DEACTUATE DUE TO TEMPERATURE HUMIDITY EFFECTS ON INEFFICIENT LINKAGE.							
CORRECTIVE ACTION-A RETROFIT ON NSL 130 WITH DOUBLE, IN SERIES, BOILOFF VALVE NEW POPPET TYPE PNEUMATICALLY OPERATED VALVE TO BE INSTALLED ON NSL 240 AND 370. VENDOR REDESIGNING PRESSURE CONTROLLER FOR BETTER OPERATING CHARACTERISTICS. THIS UNIT NOT USED ON MISSILES 370 AND ON.							
PNEUMATIC-A/B TANK PRESS	80-08-133 FUEL TANK PRESSURE REGULATOR-DIAPHR RUSH	FAR 27-08248-3	591100	SYCAMORE	YES NO	B.N. MADLEY	804324
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE FROM THE REGULATOR VENT PORT WHILE THE VEHICLE WAS AT STANDBY PRESSURE. THE STOP VALVE POSITION CONTROL DIAPHRAGM WAS PUNCTURED AS RESULT OF BEING PINCHED AT DIAPHRAGM INSTALLATION. A SIMILAR CASE REPORTED IN FAR 90-08-148.							
CORRECTIVE ACTION-VENDOR IS NOW USING A SPECIAL TOOL TO INSTALL THE DIAPHRAGMS.							
PNEUMATIC-A/B TANK PRESS	80-08-143 TANK PRESSURIZATION RISE-OFF DISCO INJECT/SEAL	FAR 27-08188-1	591031	SYCAMORE	YES NO	ROBERTSON PUL NO TOM	806487
FAILURE MODE-LEAK-EXTERNAL. THE ASSEMBLY WAS REJECTED FOR EXTERNAL LEAKAGE. THE .5L-P LIP SEAL WAS DISTORTED AS RESULT OF 90 DAYS OF OPERATIONAL TIME.							
CORRECTIVE ACTION-60/C INVESTIGATING SEAL MATERIALS TO DETERMINE IF THEIR PROPERTIES CHANGE WITH USE AND AGE.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	98-08-103 BOILOFF VALVE CONTROLLER-BELLOW	FAR 27-08112-12	130 591010	ETR	YES NO	STEWART HARMER
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR EXTERNAL LEAKAGE. SMALL HOLES WERE FOUND IN THE BELLOW AS RESULT OF INT ERGRANULAR CORROSION.						
CORRECTIVE ACTION-SINCE THIS IS FIRST SUCH FAILURE DUE TO CORROSION, THIS TYPE CONTROLLER WILL BE KEPT UNDER SURVEI LLANCE.						
PNEUMATIC-A/B TANK PRESS	AAFO-0048/BI-40M-01-27 BOILOFF VALVE	COMPOSITE-PRD/DPL	270 591001	5708-1	YES NO	
FAILURE MODE-ERRATIC OPERATION. MISSILE BOIL-OFF VALVE VENTED WHEN PCU SWITCHED MISSILE LOX TANK TO STAND BY PRESSU RIZATION DURING AN ATTEMPTED FUEL TANKING.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	AZC-27-079/P1-401-00-18 LOX AIRBORNE RELIEF VALVE	COUNTDOWN	180 591001	11	NO NO	
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. RELIEF VALVE FAILED TO CRACK WHEN LOX TANK PRESSURE ROSE RAPIDLY DURING ATTEMPT TO ACHIEVE SEQUENCE III PRESSURE.						
SYSTEM EFFECT-OPERATION TOO HIGH. LOX TANK PRESSURE ROSE TOO HIGH. SEQUENCE III PRESSURE NOT ACHIEVED SUCCESSFULLY.						
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. SIMILAR FAILURE HAD OCCURRED ON PREVIOUS LOX TANKING AND ON FIRST LAUNCH ATTEMPT.						
CORRECTIVE ACTION-INVESTIGATION SHOWED WIRING ERROR IN PCU ALLOWED HIGH FLOW VALVE TO ACTIVATE WHEN SEQUENCE III PR ESSURE INITIATED. IT WAS ALSO DETERMINED THAT 195 FEET OF BENCE LINE TO PCU ACTED AS AN ACCUMULATOR THAT CAUSED 3 TO 6 SECOND DELAY IN RELIEF VALVE BENDING OF OVERPRESSURE. CHANGED PLUMBING AND MISSILEBORNE SENSE LINE CAPPED AT LAUN CHER.						
PNEUMATIC-A/B TANK PRESS	9A-08-114 AIRBOFF DISCONNECT, HELIUM/O-RING	FAR 7-08224-7	591000	EDWARDS	YES NO	ROBERTSON TON
FAILURE MODE-LEAKAGE AT A RATE OF 200 CC/MIN. AT 60 PSIG (ALLOWABLE 400 CC/MIN. AT 60 PSIG). THIS LEAKAGE WAS CAUSE D BY THE ORTLUBE DRYING, RESULTING IN IMPROPER SEAL.						

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SYSTEM SUO-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PR1 OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-PART ELIMINATED AT END OF C SERIES MISSILES, REPLACED BY PART 27-08129. ONLYLUBE 703 ELIMINATED FOR USE ON RISEOFF DISCONNECT.						007016
PNEUMATIC-A/B TANK PRESS	90-08-113 HELLUMCHECKVALVESOLENOIDOPERATED	FAR 27-08117-9	591000	ETR	YES NO	INTERSTATE ENG ENGINEERING CORP.	007048
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. VALVE FAILED TO ACTUATE AT AMBIENT CONDITIONS. FAILURE RESULTED FROM BURR ON PISTON WALL CAUSED BY OIL OR WATER CONTAMINATION.							
CORRECTIVE ACTION-A 10 MICRON FILTER WAS INSTALLED. CLEANING SPECIFICATION INCORPORATED ON DRAWING TO ELIMINATE CONTAMINATION.							006488
PNEUMATIC-A/B TANK PRESS	90-08-127 FUEL TANK PRESSURE REGULATOR	FAR 27-08248-3	90 591000	SYCAMORE	YES NO	B.M. MADLEY	
FAILURE MODE-OUT OF TOLERANCE. TANK PRESSURE OSCILLATED BETWEEN 0.1 TO 0.2 PSI DURING PNEUMATIC SYSTEM OPERATION. FAILURE RESULTED FROM INSTALLATION OF AN IMPROPER METERING ORIFICE WHICH CAUSED A CHANGE IN SPRING RATE OF THE TANK PRESSURE SENSING DIAPHRAGM.							
CORRECTIVE ACTION-ALL UNITS HAVING IMPROPER METERING ORIFICE HAVE BEEN RETURNED TO THE VENDOR. GO/C CHANGED FUEL BY ART TANK VENT SYSTEM SO IT WILL NOT BLOW FUEL INTO THE TANK PRESSURE SENSING LINE.							006556
PNEUMATIC-A/B TANK PRESS	90-08-130 FUEL TANK PRESSURE REGULATOR	FAR 27-08248-7	240 591000	SYCAMORE	YES NO	F AND C TOOL A NO ENGINEERING	
FAILURE MODE-STRUCTURAL. PART CLOSED DURING STA C FIRING DUE TO STOP VALVE PILOT POPPET ROD BREAKING RESULTING FROM FATIGUE							
CORRECTIVE ACTION-GO/C STOPPED DELIVERY OF F AND G REGULATORS ON DATE 900817 AND VENDOR IS IN PROCESS OF REDESIGNING THE STOP VALVE POPPET ROD.							
PNEUMATIC-A/B TANK PRESS	91A0231/P3-48N-01-22 LOS SENSING LINE	COMPOSITE-PRD/DPL	220 590926	13	YES NO		
FAILURE MODE-ERRATIC OPERATION. DURING LOS TANKING, WHEN GOING FROM SEQUENCE II TO SEQUENCE III, LOS TANK PRESSURE INCREASED ABOVE PROPER STABILIZATION PRESSURE. UPON RESTEPPING AGAIN LOS TANK PRESSURE BECAME ERRATIC.							
SYSTEM EFFECT-ERRATIC OPERATION.							

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PPI OTM	VENDOR NAME VENDOR PART NO
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE LOX TANK PRESSURE TRANSDUCER WAS REPLACED BUT FURTHER INVESTIGATION REVEALED THE PROBLEM TO BE A LOX SENSING LINE MALFUNCTION. RESOLUTION UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	98-08-144 LOX TANK RELIEF VALVE	FAR 7-08210-3	180 590922	ETR	NO	B.M. MADLEY YES
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR FAILURE TO RELIEVE AT UP TO 32 PSIG IN FIVE TRIES. THE CONNECTING LINE BETWEEN THE CONTROLLERS HAD A LOOSE BOLT, A SMALL SLIVER OF TEFLON WAS FOUND IN SECONDARY CONTROLLER SPRING BORE. CRACKING PRESSURE, UPON RECEIPT, WAS 0.5 PSIG HIGH. ADJUSTING THE VALVE TO CRACK AT 0.5 PSI INTERVALS BETWEEN 27.0 A NO 31 PSIG INDICATED THE VALVE OPERATED SATISFACTORILY. LATER INFORMATION REVEALED A SENSING PRESSURE LAG BETWEEN THE ULLAGE AREA AND THE RELIEF VALVE, WHICH WAS CONSIDERED THE PRIMARY CAUSE OF THE PROBLEM.						
CORRECTIVE ACTION-VEHICLE WAS INFORMED OF THE TEFLON SLIVER FOUND IN THE CONTROLLER SENSING LINE FROM THE VEHICLE AT THE LAUNCHER WAS CAPPED OFF AND REROUTED THE PRESSURE CONTROL UNIT SENSING LINE TO THE MAIN PRESSURIZATION DUCT.						
PNEUMATIC-A/B TANK PRESS	59-08-144 LOX TANK RELIEF VALVE	FAR 7-08210-3	180 590922	ETR	YES	MADLEY INC. YES TO
FAILURE MODE-OUT OF TOLERANCE. THE REASON FOR THE LOX TANK RELIEF VALVE TO MALFUNCTION, AS REPORTED ON FAR-9-8-08-144, WAS ATTRIBUTED TO A PRESSURE LAG IN THE SENSE LINE BETWEEN THE TANK ULLAGE SPACE AND THE RELIEF VALVE.						
CORRECTIVE ACTION-THE SENSE LINE CONFIGURATION WAS CHANGED ON THE LAUNCH SITE PRIOR TO FLIGHT OF 180. THE CHANGE CAPPED OFF THE SENSING LINE FROM THE VEHICLE AT THE LAUNCHER AND REROUTED THE SENSING LINE TO THE MAIN PRESSURIZING DUCT. ALL LAUNCH SITES ARE BEING CHANGED ACCORDINGLY.						
PNEUMATIC-A/B TANK PRESS	AZC-27-079/P1-401-00-18 LOX AIRBORNE RELIEF VALVE	COUNTDOWN	180 590922	11	YES NO	
FAILURE MODE-CONTAMINATION. LOX TANK PRESSURE ROSE TO 32 PSIG WHEN AIRBORNE RELIEF VALVE FAILED TO CRACK WHEN ATTEMPT MADE TO ACHIEVE SEQUENCE III PRESSURE. TEST WAS RECYCLED TO SEQUENCE II AND VALVE CONTINUED TO FAIL ON 3 SUBSEQUENT ATTEMPTS TO ACHIEVE SEQUENCE III PRESSURE.						
SYSTEM EFFECT-OPERATION TOO HIGH. LOX TANK PRESSURE ROSE TOO HIGH WHEN RELIEF VALVE FAILED TO VENT.						
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. AFTER SIXTH TIME VALVE FAILED TO OPERATE, WHEN LOX PRESSURE ROSE TOO HIGH, THE LAUNCH WAS ABORTED.						
CORRECTIVE ACTION-RELIEF VALVE WAS REPLACED. FAULTY VALVE DISCOVERED TO HAVE 0.75 INCH TEFLON SLIVER IN SECOND STAGE CONTROLLER. SLIVER WAS PORTION OF WABER LOCATED ON CONTROLLER SCREW II. SIMILAR FAILURE ON THIRD LAUNCH ATTEMPT ATRIBUED TO ANOTHER CAUSE, HOWEVER RELIEF VALVE HAD PREVIOUSLY FAILED TO OPERATE ON LOW TANKING TEST. SIMILAR PROBLEM						

15 JUN 1968

GENERAL INVESTIGATIONS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
ALSO ON THIRD LAUNCH ATTEMPT.							091233
PNEUMATIC-A/B TANK PRESS	SR-404-B4-24 FUEL TANK REGULATOR	CAPTIVE	24D 500910	82 135.03	YES NO		090304
FAILURE MODE-FUEL TANK REGULATOR BECAME ERRATIC FOLLOWING BOOSTER CUTOFF. SYSTEM EFFECT-ERRATIC OPERATION WAS PRESENT UNTIL 21 SECONDS PRI TO BOOSTER CUTOFF, AT WHICH TIME DISCHARGE PRESSURE BEGAN TO DECREASE. TANK PRESSURE DECREASED FROM 99.8 PSIG TO 76.9 PSIG BY BOOSTER CUTOFF. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-FUEL TANK REGULATOR WAS REMOVED FOR FAILURE ANALYSIS.							090607
PNEUMATIC-A/B TANK PRESS	FIAS290/PS-403-00-14 MELIUM STORAGE BOTTLE	COUNTDOWN	14D 500911	13 -10	YES NO		090607
FAILURE MODE-OUT OF TOLERANCE. MELIUM BOTTLES PRESSURE TOO LOW. SYSTEM EFFECT-OPERATION TOO LOW. VEHICLE EFFECT-COUNTDOWN DELAYED TO WAIT FOR SATISFACTORY PRESSURE. 1 MINUTE DELAY. CORRECTIVE ACTION-NONE.							0904576
PNEUMATIC-A/B TANK PRESS	91-413-C7-09 FUEL TANK PRESSURE REGULATOR-0 SER IES	CAPTIVE	90 500911	91 0	YES NO	YES MADLEY	0904576
FAILURE MODE-ERRATIC OPERATION. REGULATOR INSTABILITY DURING BOOSTER STAGE. SYSTEM EFFECT-ERRATIC OPERATION-OSCILLATIONS IN MISSILE FUEL TANK PRESSURE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.							090460
PNEUMATIC-A/B TANK PRESS	90-08-143 TANK PRESSURIZATION RING-OFF DISCO 27-08128-3 INJECT-BEAL	PAR	500910	82CANDRE	YES NO	ROBERTSON PUL NO TON	090460
FAILURE MODE-LEAK EXTERNAL. THE ASSEMBLY WAS REJECTED FOR EXTERNAL LEAKAGE. THE REL-F LIP SEAL WAS DISTORTED AS A RESULT OF 48 DAYS OF OPERATIONAL TIME. CORRECTIVE ACTION-60/C INVESTIGATING SEAL MATERIALS TO DETERMINE IF THEIR PROPERTIES CHANGE WITH USE AND AGE.							090460

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRJ OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	AZC-27-079/P3-48N-01-16 LOX AIRBORNE RELIEF VALVE	COMPOSITE-PRO/DPL	180 390908	13	NO NO	
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. DURING LOX TANKING TEST THE LOX TANK PRESSURE ROSE TO 20.7 PSIG WHEN ATTEMPTING TO ACHIEVE SEQUENCE III PRESSURE. LOX AIRBORNE RELIEF VALVE HAD FAILED TO CRACK. TEST RECYCLED TO SEQUENCE II. VALVE OPERATED PROPERLY THEREAFTER.</p> <p>SYSTEM EFFECT-OPERATION TOO HIGH. LOX TANK PRESSURE ROSE TO 20.7 PSIG.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. TANKING TEST HAD TO BE RECYCLED TO SEQUENCE II AND HELD THERE ELEVEN MINUTES BEFORE ATTEMPTING SEQUENCE III PRESSURE AGAIN.</p> <p>CORRECTIVE ACTION-NONE. HOWEVER TWO SUBSEQUENT LAUNCHES WERE ABORTED FOR SAME REASON IN WHICH CASES FAILURE WAS INDICATED. SEE VEHICLE 180 CORRECTIVE ACTION FOR COUNTDOWN PROBLEM ON 591001.</p>						
PNEUMATIC-A/B TANK PRESS	EN1341/P3-401-00-17 BOILOFF VALVE	PRF	170 390908	13 -1500	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION. THE LOX BOIL-OFF VALVE STUCK CLOSED INTERMITTENTLY DURING TANKING FOR FLIGHT READINESS FIRING.</p> <p>SYSTEM EFFECT-OPERATION TOO HIGH. LOX TANK PRESSURE ROSE ABOVE NOMINAL EXPECTED LEVEL DURING TANKING DUE TO THE CLOSED BOIL-OFF VALVE.</p> <p>VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. COUNTDOWN ABORTED AND TEST CANCELLED AT 1-8 MINUTES. IT WAS RESCHEDULED FOR THE NEXT DAY.</p> <p>CORRECTIVE ACTION-NONE. INDICATED EXCEPT FOR EMERGENCY ACTION. STOP TANKING AND OPEN STORAGE TANK VENT VALVE.</p>						
PNEUMATIC-A/B TANK PRESS	AZC-27-079/P3-401-00-17 BOILOFF VALVE CONTROLLER	PRF	170 390908	13	YES NO	
<p>FAILURE MODE-FAIL DURING OPERATION. INNER BOILOFF VALVE FAILED IN THE CLOSED POSITION DUE TO FAILURE OF THE PRESSURE CONTROLLER.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-COUNTDOWN (PRF) ABORTED AND RE-SCHEDULED.</p> <p>CORRECTIVE ACTION-CONTROLLER WAS REPLACED.</p>						
PNEUMATIC-A/B TANK PRESS	31-033-00-09 LOX TANK PRESSURE REGULATOR & NENI CS	CAPTIVE	NO 000001	01 170.4	YES NO	YES MADLEY
<p>FAILURE MODE-ERRATIC OPERATION. HIGH FREQUENCY, LOW AMPLITUDE PRESSURE OSCILLATION WERE NOTED ON REGULATOR BURNERS & PRESSURE FROM 170.4 SEC. TO BECO.</p>						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
	SYSTEM EFFECT-NONE. OSCILLATIONS WERE NOT REFLECTED IN LOW TANK PRESSURE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.						094091
PNEUMATIC-A/B TANK PRESS	SI-413-CO-09 FUEL TANK PRESSURE REGULATOR-0 SER 123	CAPTIVE	90 990901	91 0	YES NO	YES MADLEY	094877
	FAILURE MODE-ERRATIC OPERATION. REGULATOR EXHIBITED INSTABILITY DURING BOOSTER PHASE. SYSTEM EFFECT-ERRATIC OPERATION-FUEL TANK ULLAGE PRESSURE OSCILLATED BETWEEN 89.7 AND 83.2 PSIG. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.						093391
PNEUMATIC-A/B TANK PRESS	EM1330/PA-401-00-10 HELIUM BOTTLE	PRF	100 990901	14 -420	NO NO		093391
	FAILURE MODE-OUT OF EXPECTED TEST VALUE. THE AIRBORNE HELIUM BOTTLE PRESSURE WAS BELOW MINIMUM VALUE AT T-7 MINUTES OF THE FLIGHT READINESS FIRING COUNTDOWN DUE TO PREVIOUSLY CORRECTED HELIUM COMPRESSOR OPERATION. SYSTEM EFFECT-OPERATION TOO LOW. THE AIRBORNE HELIUM BOTTLE PRESSURE WAS AT TOO LOW A VALUE FOR SATISFACTORY TEST OPERATION. VEHICLE EFFECT-COUNTDOWN DELAYED. COUNTDOWN DELAYED 15 MINUTES WHILE PRESSURE WAS RAISED TO NOMINAL VALUE BY NORMAL COMPRESSOR ACTION. CORRECTIVE ACTION-NONE.						094067
PNEUMATIC-A/B TANK PRESS	98-09-105 BOILOFF VALVE, NOTION SWITCH	FAR 27-80348-807	110 990901	ETR	YES NO	YES STEWART WARNER	094067
	FAILURE MODE-OUT OF TOLERANCE. VALVE WENT TO FULL OPEN AND FAILED TO CONTROL THE PRESSURE ABOVE 2.3 PSIG. UPPER LIM IT SWITCH FAILED BECAUSE ADJUSTMENTS ARE NOT POSSIBLE WITH WIDE SCATTER IN THE CONTACT BREAK DISTANCE AND CONTRACTION OF CAM. CORRECTIVE ACTION-SWITCH MECHANISM REDESIGNED. ALL UNITS IN FACTORY AND AT TEST SITES RETROFITTED.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI QTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-110 BOILOFFVALVE, MOTIONSWITCH	FAR 27-08112-7	980900	ETR	YES	STEWART WARNER	097630
FAILURE MODE-FAIL DURING OPERATION-FUSED CONTACTS ON LOW PRESSURE SWITCH DUE TO SLUGGISH MECHANICAL BREAKING CAUSING HIGH ELECTRICAL LOADS B/W 120.							
CORRECTIVE ACTION-ACCELERATED PROGRAM UNDERWAY TO REDESIGN CONTROLLER TO ELIMINATE FAILURES CAUSED BY INEFFECTIVE SWITCHES AND LINKAGES.							
PNEUMATIC-A/B TANK PRESS	98-08-110 BOILOFFVALVE, MOTIONSWITCH	FAR 27-08112-7	980900	ETR	YES	STEWART WARNER	097631
FAILURE MODE-OUT OF TOLERANCE. TOLERANCES AND ADJUSTMENTS LOOSE SUCH THAT THE LOW LIMIT SWITCH COULD BE EITHER OPEN OR CLOSED AT PRESSURES BELOW 2.3 PSIG B/W 132. THREE ADDITIONAL FAILURES OF SUBJECT COMPONENT RECORDED AT ETR, ROST AND STANMORE.							
CORRECTIVE ACTION-ACCELERATED PROGRAM UNDERWAY TO REDESIGN CONTROLLER TO ELIMINATE FAILURES CAUSED BY INEFFECTIVE SWITCHES AND LINKAGES.							
PNEUMATIC-A/B TANK PRESS	98-08-110 BOILOFFVALVE, MOTIONSWITCH	FAR 27-08112-13	980900	ETR	YES	STEWART WARNER	097627
FAILURE MODE-FAIL DURING OPERATION-FUSED CONTACTS ON LOW PRESSURE SWITCH DUE TO SLUGGISH MECHANICAL BREAKING CAUSING HIGH ELECTRICAL LOADS-B/W 177.							
CORRECTIVE ACTION-ACCELERATED PROGRAM UNDERWAY TO REDESIGN CONTROLLER TO ELIMINATE FAILURES CAUSED BY INEFFECTIVE SWITCHES AND LINKAGES.							
PNEUMATIC-A/B TANK PRESS	98-08-110 BOILOFF VALVE	FAR 27-80388-803	980900	ETR	YES	STEWART WARNER	097628
FAILURE MODE-FAIL DURING OPERATION-VALVE FAILED EITHER TO OPEN OR CLOSE.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED- DURING ANALYSIS, VALVE OPERATED SATISFACTORILY UNDER ALL CONDITIONS. PRESSURE CONTROLLER TO BE REDESIGNED-THIS VALVE WITHIN PRESSURE CONTROLLER UNIT.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-110 BOILOFF VALVE NOTION SWITCH	FAR 27-08112-7	980900	ETR	YES NO	STEWART WARNER	987498
FAILURE MODE-FAIL DURING OPERATION-LOW LIMIT SWITCH FAILED TO DEACTIVATE FOR A PERIOD OF 50 TO 80 SECONDS AT MINUS 8 0 DEGREES F. AT LOWER TEMPERATURES IT DID NOT DEACTIVATE AT ALL. 8/N 134 AND 118.							
CORRECTIVE ACTION-ACCELERATED PROGRAM UNDERWAY TO REDESIGN CONTROLLER TO ELIMINATE FAILURES CAUSED BY INEFFECTIVE S WITCHES AND LINKAGES.							
PNEUMATIC-A/B TANK PRESS	98-08-122 FUEL TANK PRESSURE REGULATOR	FAR 7-08217-3	11C 980900	ETR	YES NO	BH MADLEY	98767
FAILURE MODE-OUT OF TOLERANCE. EXHIBITED WIDE CONTROL AMPLITUDE AND OUT OF BAND PRESSURE OUTPUT UNDER FLOW. PARTS O PERATED WITHIN SPECIFICATION LIMITS DURING TESTING (2 PIECES).							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED AND NO CORRECTIVE ACTION TAKEN BECAUSE REGULATORS OPERATED WITHIN SPECIFIED LIMITS.							
PNEUMATIC-A/B TANK PRESS	98-08-124 HELIUM SOLENOID OPERATED CHECK VAL 27-08117-9 YE	FAR	240 380900	SYCAMORE	YES NO	INTERSTATE ENG . CORP	988481
FAILURE MODE-EXTERNAL LEAK. PILOT WAS LEAKING AT MINUS 800 DEGREES AND ACTUATION TIME WAS 2 SECONDS DUE TO CONTAMIN ATION AS METAL CHIPS AND KEL-F GREASE WERE FOUND.							
CORRECTIVE ACTION-INSTRUCTIONS ISSUED TO BLOODMAN HELIUM SYSTEM TO REMOVE DIRT PARTICLES AND MOISTURE-INSPECT GROUND D HELIUM FILTER FOR METAL PARTICLES AND TO CLEAN AS REQUIRED.							
PNEUMATIC-A/B TANK PRESS	0481/03-4NO-01-13 LOE TANK REGULATOR	COMPOSITE-770/0PL 380927	130	A-3	NO NO		988788
FAILURE MODE-FAIL DURING OPERATION-DUE TO INABILITY TO VENT BOOSTER HELIUM BOTTLES NORMALLY, THEY WERE VENTED THROU GH THE LOE TANK REGULATOR AND LOE ULLAGE TANK. WHILE VENTING, THE REGULATOR FAILED TO MAINTAIN FLIGHT PRESSURE IN TH E ULLAGE TANK. INDICATED PRESSURE WAS 2.0 PSIG.							
SYSTEM EFFECT - OPERATION TOO LOW. HOWEVER, ADEQUATE LOE TANK PRESSURE WAS MAINTAINED BY PCU.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-LOE TANK PRESSURE REGULATOR WAS REPLACED.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	DAB1/A3-4NO-D1-13 SOLENOID CHECK VALVE	COMPOSITE-FRD/DPL 27-08117-9	13D 990827	A-3	YES NO	INTERSTATE ENG .CO.	899777
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- BOOSTER HELIUM BOTTLES DID NOT VENT DUE TO A FAILURE OF THE SOLENOID OPERATED CHECK VALVE TO ENERGIZE. AS A RESULT THE BOTTLES WERE VENTED THROUGH THE LOG AND FUEL ULLAGE TANKS OUT THE TANK PRESSURE REGULATOR.							
SYSTEM EFFECT-NONE-VEHICLE TANK PRESSURIZATION MAINTAINED BY PCU.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-SOLENOID CHECK VALVE WAS REPLACED.							
PNEUMATIC-A/B TANK PRESS	DAB1/A3-4NO-D1-13 FUEL TANK PRESSURE REGULATOR	COMPOSITE-FRD/DPL 990827	13D 990827	A-3	NO NO		899774
FAILURE MODE-FAIL DURING OPERATION. DUE TO THE INABILITY TO VENT THE BOOSTER HELIUM BOTTLES NORMALLY THEY WERE VENTED THROUGH THE FUEL TANK PRESSURE REGULATOR AND FUEL ULLAGE TANK. WHILE VENTING, THE REGULATOR FAILED TO MAINTAIN FLIGHT PRESSURE IN THE ULLAGE TANK. INDICATED PRESSURE WAS 13 PSIG.							
SYSTEM EFFECT-NONE. VEHICLE FUEL TANK PRESSURE WAS REPLACED BY PCU.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-FUEL TANK PRESSURE REGULATOR WAS REPLACED.							
PNEUMATIC-A/B TANK PRESS	31-411-89-09 FUEL TANK PRESSURIZATION REGULATOR	CAPTIVE	9D 990821	31 0.9	YES NO	MADLEY	899812
FAILURE MODE-FAIL DURING OPERATION- REGULATOR EXHIBITED INSTABILITY DURING BOOSTER PHASE.							
SYSTEM EFFECT-ERRATIC OPERATION- FUEL TANK ULLAGE PRESSURE OSCILLATED BETWEEN 39.9 AND 61.9 PSIG.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B TANK PRESS	39-08-091 DISCONNECT COUPLING, RISE-OFF, TAN 27-08128-1 R SEAL	FAR	9D 990817	39 0.9	YES NO	ROBERT SMAY FU LYON	899829
FAILURE MODE-INTERNAL LEAK. 60SCIN LEAKAGE PART MATING SEAL. 10 SCIN ALLOWED. NON-AUTHORIZED LUBRICANT USED ON SLIDING SURFACES.							
CORRECTIVE ACTION-60/C NOTIFIED PERSONNEL NOT TO USE LUBRICANTS. IMPROVED SEAL BEING TESTED FOR FUTURE USE.							

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GENERAL MICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	31-406-B4-09 FUEL TANK PRESSURE REGULATOR	CAPTIVE	90 990804	91 0.55	YES NO	YES MADLEY	090047
FAILURE MODE-OUT OF EXPECTED TEST VALUE. FUEL TANK REGULATOR OSCILLATED BETWEEN 92.2 AND 92.8 PSIG AT 1.5 CPS.							
SYSTEM EFFECT-ERRATIC OPERATION. FUEL TANK WALLAGE PRESSURE OSCILLATED IN RESPONSE TO THE REGULATOR. WALLAGE DATA INDICATED SATISFACTORY RELIEF VALVE ACTUATION WHEN TRANSIENT PEAKS WERE ABOVE 92.2 PSIG (RELIEF VALVE SETTINGS).							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-REPLACE REGULATOR.							
PNEUMATIC-A/B TANK PRESS	90-08-106 FUEL TANK PRESS. RELIEF VALVE	FAR 7-00210-3	130 990800	ETR	YES NO	B.M. MADLEY	090060
FAILURE MODE-EXTERNAL LEAK. VALVE REPORTED TO HAVE LEAKED THROUGH MAIN VENT DURING PRESSURE CYCLING. AMOUNT NOT RECORDED.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. VALVE OPERATED WITHIN SPECIFICATION DURING LABORATORY TEST-NO FURTHER ACTION REQUIRED.							
PNEUMATIC-A/B TANK PRESS	90-08-091 DISCONNECT-PNEU. RISE-OFF. TANK PR 27-00120-3 ESS./SEAL-GROUND	FAR 7-00120-3	90 990800	BYCAMORE	YES NO	ROBERT SHAW FU LION	090030
FAILURE MODE-INTERNAL LEAK. 60 SCIN LEAKAGE PAST MATING SEAL. 10 SCIN ALLOWED NON-AUTHORIZED LUBRICANT USED ON SLIDING SURFACES.							
CORRECTIVE ACTION-60/C NOTIFIED PERSONNEL NOT TO USE LUBRICANTS-IMPROVED SEAL BEING TESTED FOR FUTURE USE.							
PNEUMATIC-A/B TANK PRESS	90-08-100 HIGH PRESSURE RELIEF VALVE/POCKET	FAR 7-00239	90 990800	ETR	YES NO	WHITTAKER	090034
FAILURE MODE-STRUCTURAL. LEAKAGE THROUGH VENT PORT CAUSED BY CORROSION OF THE MAIN RELIEF POCKET.							
CORRECTIVE ACTION-THIS COMPONENT ELIMINATED FOR FUTURE D-SERIES VEHICLES.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	AZC-87-093/P1-404-00-11 REGULATOR	FLIGHT	110 590726	11 108	YES NO	000170
<p>FAILURE MODE-FAIL DURING OPERATION. PROBABLE CLOSURE OF THE FUEL TANK REGULATOR OCCURRED AT APPROXIMATELY 108 SECONDS. CAUSE UNKNOWN. POSSIBLE CAUSES CONSIDERED INCLUDE: 1) REGULATOR FAILURE DUE TO HIGH-TEMPERATURE HELIUM AND 2) FUEL SENSING PRESSURE CAUSED BY FUEL IN THE SENSING LINE.</p> <p>SYSTEM EFFECT-OPERATION STOPS PREMATURELY. FUEL TANK PRESSURIZATION WAS PREMATURELY TERMINATED.</p> <p>VEHICLE EFFECT-NONE. FUEL TANK PRESSURE REMAINED HIGH ENOUGH TO MAINTAIN POSITIVE DIFFERENTIAL PRESSURE ACROSS IMMEDIATE BULKHEAD THROUGHOUT FLIGHT.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
PNEUMATIC-A/B TANK PRESS	FTAS017/P1-401-00-11 REGULATOR	PRF	110 590734	11/2TR	YES NO	000800
<p>FAILURE MODE-OUT OF TOLERANCE. THE FUEL TANK REGULATOR ALLOWED TANK PRESSURE TO EXCEED UPPER TOLERANCE AT CHANGEOVER TO INTERNAL PRESSURIZATION AND AT ENGINE CUTOFF.</p> <p>SYSTEM EFFECT-OPERATION TOO HIGH.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-REPLACED REGULATOR.</p>						
PNEUMATIC-A/B TANK PRESS	91-407-A3-09 LOW TANK PRESSURE REGULATOR	CAPTIVE	90 590713	91 110	YES NO	004962
<p>FAILURE MODE-ERRATIC OPERATION. ABNORMAL OSCILLATIONS APPEARED IN THE LOW PRESSURE REGULATOR INLET AND OUTLET PRESSURES FROM 110 SECONDS TO BECO. THESE OSCILLATIONS ARE A RESULT OF THE UNSTABLE CHARACTERISTICS OF THE C SERIES REGULATOR WHEN SUBJECTED TO A LOW INLET PRESSURE.</p> <p>SYSTEM EFFECT-NONE. LOW TANK PRESSURE REMAINED STABLE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-NONE.</p>						
PNEUMATIC-A/B TANK PRESS	90-08-103 FUEL TANK PRESS. RELIEF VALVE, DIAPHRAGM 7-08310-3	PAR	90 590700	WTR	YES NO	004962
<p>FAILURE MODE-STRUCTURAL. PRESSURE NOT ATTAINED IN ULLAGE TANK. DIAPHRAGM RUPTURED DUE TO DYNAMIC CHECKOUT UNIT VALVE BEING CLOSED WHEN IT SHOULD HAVE BEEN OPEN.</p>						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE 11ME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-VENDOR TO CORRECT DESIGN OF DYNAMIC CHECKOUT VALVE WHICH CAUSED FAILURE.							090044
PNEUMATIC-A/B TANK PRESS	00-08-077 FUEL TANK PRESSURE RELIEF VALVE	FAR 8-08218-3	2D 390700	SYCAMORE	YES B.M. MADLEY IN NO C 3		090049
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-RELIEF VALVE FAILED TO RESPOND WHEN FUEL TANK PRESSURE WENT ABOVE SPECIFICATION LIMITS AT SWITCHOVER TO INTERNAL.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED-UNIT REWORKED AND RECALIBRATED AS INDICATED IN FAR 98-08-063.							
PNEUMATIC-A/B TANK PRESS	98-08-084 REGULATOR, FUEL TANK PRESSURE/DIAP NRALN/SEAL	FAR 7-08217-3	5C 390700	ETR	YES B. M. MADLEY : NO MC 10342-3		090043
FAILURE MODE-LEAK, EXTERNAL-A HOLE IN THE DIAPHRAGM AND LEAKAGE BETWEEN FLOW LIMITING PISTON SHAFT AND ITS TEFLON BUSHING IN THE TANK SENSING CONTROLLER UNIT CAUSED EXCESSIVE BLEEDING.							
CORRECTIVE ACTION-CONFIRMED-IN FAR 98-08-071 GO/C INITIATED ACTION WITH VENDOR TO CORRECT TEFLON BUSHING AND FLOW LIMITING PISTON SHAFT LEAK. GO/C INITIATED ACTION WITH VENDOR TO CONSIDER DIAPHRAGM CONDITION.							
PNEUMATIC-A/B TANK PRESS	00-08-082 REGULATOR, FUEL TANK PRESSURE-POPP ET	FAR 7-08217-3	RD 390700	SYCAMORE	YES B. M. MADLEY : NO MC 10342-3		090044
FAILURE MODE-CONTAMINATION-A SMALL POPPET IN THE POWER SHUTOFF CONTROLLER WAS PREVENTED FROM CLOSING BY THE PRESENCE OF A UNIDENTIFIABLE SALT LINE CRUST ON THE POPPET AND SEAT. CONTAMINATION WAS FROM AN OUTSIDE SOURCE WHOSE ONLY ACCESS TO THE INTERIOR WAS VIA VARIOUS SCREENED AMBIENT VENTS.							
CORRECTIVE ACTION-FAILURE CONSIDERED TO BE UNIQUE AND CONSIDERED CLOSED HOWEVER GO/C WILL CONTINUE SURVEILLANCE OF THE PART.							
PNEUMATIC-A/B TANK PRESS	98-08-083 REGULATOR, FUEL TANK PRESSURE	FAR 7-08217-3	DC 390700	ETR	YES B.M.MADLEY INC NO 10342-3		090028
FAILURE MODE-ERRATIC OPERATION-SATISFACTORY REGULATION COULD NOT BE OBTAINED. ON THREE AMBIENT SHUT-DOWN ATTEMPTS THE REGULATED PRESSURE VARIED FROM 98 PSIG TO 88 PSIG.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. LAB TESTS INDICATED REGULATOR OPERATED WITHIN NORMAL LIMITS. NO FURTHER ACTION.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PHI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	90-08-099 FUEL TANK PRESS. RELIEF VALVE	FAR 7-08218-3	4D 990700	WTR	YES NO	B.H. MADLEY	090033
FAILURE MODE-OUT OF TOLERANCE-RESEAT PRESSURES 0.5 TO 1.8 PSIG OUTSIDE SPECIFICATION VALVE. DURING ANALYSIS UNIT CRACKED AND RESEATED WITHIN SPECIFICATION.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED-UNIT REMOVED AND RECALIBRATED.							
PNEUMATIC-A/B TANK PRESS	90-08-084 REGULATOR - FUEL TANK PRESS, SPRIN 7-08217-3	FAR 7-08217-3	4D 990700	FACTORY	YES NO	B.H. MADLEY 10542-3	090031
FAILURE MODE-STRUCTURAL. FAILURE TO LOCK-UP OUTLET PRESSURE REACHED 72 PSIG, SHOULD NOT EXCEED 67 PSIG. SHUT-OFF PI STON SPRING BROKE AND JAMMED BETWEEN PISTON AND CYLINDER.							
CORRECTIVE ACTION-VENDOR NOTIFIED-VENDOR WILL EXERCISE MORE STRINGENT QUALITY CONTROL MEASURES.							
PNEUMATIC-A/B TANK PRESS	9A-08-112 BOILOFF VALVE, SEAL	FAR 27-80369-405	590700	EDWARDS	YES NO	STEWART WAGNER	087935
FAILURE MODE-LEAK EXTERNAL-LEAKAGE THROUGH BUTTERFLY SEAL IN CLOSED POSITION. LEAKAGE MEASURED AT 20 CFM AT 8 PSIG (ALLOWABLE 0.08 CFM AT 8 PSIG) WAS DUE TO EXCESSIVE CLEARANCE BETWEEN BUTTERFLY SEAL AND HOUSING SEAL RESULTING FROM WARPAGE OR CHANGE IN DIAMETER WITH AGING AND USE.							
CORRECTIVE ACTION-TEFLON AND REL-P MATERIAL CHARACTERISTIC CHANGES AT TEMPERATURES TO MINUS 300 DEG. F BEING STUDIED. BOTH MATERIALS ARE INCLUDED IN AGING STUDY PROGRAM.							
PNEUMATIC-A/B TANK PRESS	98-08-109 FUEL TANK PRESS. RELIEF VALVE	FAR 7-08218-3	11D 990700	ETR	YES NO	B.H. MADLEY	087929
FAILURE MODE-OUT OF SPECIFICATION. CRACK AND RESEAT PRESSURES WERE OUTSIDE SPECIFICATION LIMITS. FOLLOWING READJUSTMENT IT OPERATED SATISFACTORILY.							
CORRECTIVE ACTION-UNIT RETURNED TO VENDOR FOR SENSING BELLOW MODIFICATION AND CALIBRATION.							

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GENERAL MANICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PT NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRE OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-119 FUEL TANK PRESSURE REGULATOR	FAR 7-08217-9	9C 590700	ETR	YES NO	B.H. MADLEY	007815
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE MINIMUM PRESSURE OF 55 PSIG AND A MINIMUM PRESSURE OF 67 PSIG OCCURRED AT AN APPROXIMATE RATE OF 1 CPS DURING BLOWDOWN. (MAX. ALLOWABLE 59.9 PSIG). FAILURE DUE TO DIMENSION VARIATIONS OF FLOW LIMITING PISTON AND TEFLON BUSHING. ALSO EXCESSIVE FLUOROLUBE WAS PRESENT IN INLET.							
CORRECTIVE ACTION-ACTION WAS INITIATED TO CORRECT DIMENSION VARIATIONS AND TO LIMIT USE OF FLUOROLUBE.							
PNEUMATIC-A/B TANK PRESS	DAST1/A1-40M-09-06 BOILOFF VALVE SWITCH	COMPOSITE-FRD/DPL	50 590621	A-2	YES NO		006894
FAILURE MODE-ELECTRICAL SHORT. THE VALVE WAS OPENING AT 2.6 PSI TO 3 DEGREES, THEN STOPPING, AND CLOSING AT 2.3 PSI. THE CLOSING PRESSURE SWITCH ON THE PRESSURE SENSING CONTROL WAS FUSED TOGETHER, CAUSING APPARENT MALFUNCTION OF THE VALVE.							
SYSTEM EFFECT-OPERATION TOO LOW-NESSILE FOR TANK PRESSURE WAS TOO LOW.							
VEHICLE EFFECT-DPL WAS ABORTED AND RECOMMENDED.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	98-08-107 SOLENOID OPER. CHECK VALVE-HELIUM	FAR 27-08117-9	50 590603	ETR	YES NO	INTERSTATE ENG . CO.	006070
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FAILED TO DUMP BOTTLE PRESSURE. WATER, OIL AND RUST IN SOLENOID PL UNDER AREA-S/W.							
CORRECTIVE ACTION-SLOW-DOWN CONDUCTED TO REMOVE CONTAMINATION. 10 MICRON FILTERS INSTALLED.							
PNEUMATIC-A/B TANK PRESS	98-08-107 SOLENOID OPER. CHECK VALVE-HELIUM	FAR 27-08117-9	50 590603	ETR	YES NO	INTERSTATE ENG . CO.	007828
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CHIPPING AND SCORING OF THE NYLON BUMPER DEPOSITED CHIPS IN VALVE CAUSING JAMMING. WHEN VALVE WAS NOT CHILLED IT FAILED TO OPEN. 3/4 58.							
CORRECTIVE ACTION-60/C TO INSTALL 10 MICRON FILTER IN THE HELIUM SUPPLY LINE.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME	DATE DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-107 SOLENOID OPER. CHECK VALVE-HELIUM	87-06117-9 FAR	5D	87R	990602	YES NO	INTERSTATE ENG . CO.	898059
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. WATER, OIL, AND RUST IN SOLENOID PLUNGER AREA RESULTING IN UNIT FA ILING TO SEAT WHEN CHARGE LINE WAS DUMPED. S/N 22.								
CORRECTIVE ACTION-BLOW DOWN CONDUCTED TO REMOVE CONTAMINATION. 10 MICRON FILTERS INSTALLED.								
PNEUMATIC-A/B TANK PRESS	9A-02-098 VALVE-MANUAL SHUT-OFF	FAR 7-06233-11	590600	EDWARD	YES ROBERTSMAN FUL NO TON			898032
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. VALVE FAILED TO CLOSE SUFFICIENTLY TO ALLOW INSERTION OF LOCK LUG. EVIDENCE THAT VALVE HAD BEEN OVER TORQUED.								
CORRECTIVE ACTION-VALVE MODIFIED BY CHANGING LOCKING DEVICE TO SLIP PIN LOCK FOR D-SERIES VEHICLES.								
PNEUMATIC-A/B TANK PRESS	98-08-073 REGULATOR-FUEL TANK PRESSURE	FAR 7-06217-3	3D	87R	590600	YES B.M. MADLEY IN NO C 10342-3		898033
FAILURE MODE-CONTAMINATION OF FLUOROLUBE ON THE HIGH PRESSURE INLET SHUT-OFF PISTON, FLOW LIMITER HIGH PRESSURE ACT IVATION SHAFT, REGULATOR PISTON AND INTERIOR BODY CAUSED REGULATOR TO OPERATE ERRATICALLY. THE RESTRICTING ACTION OF THE FLUOROLUBE PREVENTED THE NORMAL RAPID OPERATION OF THE SHUTOFF PISTON AND REGULATOR PISTON.								
CORRECTIVE ACTION-60/C WAS INSTITUTED CORRECTIVE ACTION TO PREVENT EXCESSIVE APPLICATION OF FLUOROLUBE TO UNIT INLE T AND TANK SENSING CONNECTIONS DURING ORIGINAL INSTALLATION OR REPLACEMENT OF THE ITEM PART.								
PNEUMATIC-A/B TANK PRESS	98-08-071 REGULATOR, FUEL TANK PRESSURE-O/H	FAR 7-06217-3	7C	87R	590600	YES B.M. MADLEY IN NO C 10342-3		898031
FAILURE MODE-LEAK EXTERNAL. LEAKAGE BETWEEN FLOW LIMITING PISTON SHAFT AND ITS TEFLON BUSHING. BUSHING WAS NOT EXER TING PRESSURE ON THE SHAFT AS INTENDED.								
CORRECTIVE ACTION-60/C INITIATED ACTION WITH VENDOR TO CORRECT PROBLEM. VENDOR EVALUATING TEFLON SEALS AND O-RINGS.								

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRJ OTH	VEHICLE NAME PART NO
PNEUMATIC-A/B TANK PRESS	U437/A1-402-00-04	PRF	4D 590529	A-1	YES YES	
<p>FAILURE MODE-FAIL DURING OPERATION-MISSILE LOS TANK FAILED TO REACH FLIGHT PRESSURE IN TIME TO ALLOW COMMIT SEQUENCE TO BE COMPLETED. LEVEL OF LOS WAS APPARENTLY LOWER THAN PLANNED, THUS INCREASING ULLAGE SPACE AND TIME TO REACH FLIGHT PRESSURE.</p> <p>SYSTEM EFFECT-OPERATION TOO LONG.</p> <p>VEHICLE EFFECT-COMMIT SEQUENCE ABORTED AND COUNTDOWN RESCHEDULED.</p> <p>CORRECTIVE ACTION-SEQUENCE TIMER EXTENDED TO 60 SECONDS TO ALLOW PRESSURIZATION OF GREATER THAN PLANNED ULLAGE SPACE.</p>						
PNEUMATIC-A/B TANK PRESS	90-08-102 REGULATOR, FUEL TANK PRESS/O-RING	FAR 7-008217-3	60 590520	WTR	YES B.H. MADLEY NO 10542-3	
<p>FAILURE MODE INTERNAL LEAK. UNIT BECAME COMPLETELY INOPERATIVE DURING SYSTEM CHECKOUT. FAILURE CAUSED BY LOSS OF CO NITRO PRESSURE DUE TO EXCESSIVE LEAKAGE PAST O-RINGS IN POWER SHUT-OFF VALVE ASSEMBLY. O-RINGS WERE DRY.</p> <p>CORRECTIVE ACTION-VENDOR ADVISED OF O-RING LUBRICATION CONDITIONS. VENDOR TO PRE-LUBE O-RINGS.</p>						
PNEUMATIC-A/B TANK PRESS	A2C-27-052/P4-403-00-07 FUEL TANK PRESSURIZATION DUCT	FLIGHT	7D 590510	14 -1.4	NO NO	
<p>FAILURE MODE-STRUCTURAL. FLOW OF HELIUM TO THE FUEL TANK WAS REDUCED AS RESULT OF DAMAGE TO THE PRESSURIZATION DUCT AND AIRFRAME CAUSED BY A MALFUNCTION OF THE LAUNCHER BE RELEASE MECHANISM. THIS CONDITION OCCURRED -0.4 SECOND BEFORE 42 INCH MOTION.</p> <p>SYSTEM EFFECT - DEPLETION OF GAS SUPPLY.</p> <p>VEHICLE EFFECT-LOSS OF VEHICLE INTEGRITY. SYSTEM EFFECT - DEPLETION OF GAS SUPPLY.</p> <p>CORRECTIVE ACTION-HOLDOWN PIN RETRACTING LINKAGE ADJUSTMENT PROCEDURE TO BE SUPPLEMENTED. INSPECTION PROCEDURE TO BE REVISED TO INCLUDE THE CHECKING OF ALL JOINTS FOR PROPER ADJUSTMENT AND LUBRICATION, AND TO CHECK FOR PROPER CLEARANCES FOR ALL MOVING PARTS. BELL CRANK RETAINING BOLTS OF HIGHER HEAT-TREAT STEEL TO BE INSTALLED ON ALL LAUNCHERS.</p>						
PNEUMATIC-A/B TANK PRESS	89-08-001 BOILOFF VALVE SWITCH	FAR 87-00112-7	890500	87CANDORE	YES STEWART WARNER NO	
<p>FAILURE MODE-FAILURE TO OPERATE AT PRESCRIBED TIME- MICRO SWITCHES BURNED AS A RESULT OF HIGH CURRENT DRAWN BY PHOTO B DURING FAILURE OF BOIL-OFF VALVE.</p>						

GENERAL DYNAMICS
COMMVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	BITC TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-REF. FAR D9-08-D72.						
PNEUMATIC-A/B TANK PRESS	91-08-080 SOLENOID VALVE-CONNECTOR	FAR 27-80399-1	390300	SYCAMORE	YES STEWART WARNER NO	090042
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME THE VALVE AND CONTROLLER FAILURE WAS THE RESULT A WIRING CHANGE IN THE VALVE CONNECTOR, INADVERTENTLY NOT CARRIED THRU ON THE MISSILE WIRING, THE CONTROLLER SWITCHES WERE DAMAGED THRU THE VALVE AND BURNED OUT. THE VOLTAGE AT THE SOLENOID REACHED 36 VOLTS (SOLENOID RATED AT 24 VOLTS) THEREBY CAUSING SOLENOID TO JAM.						
CORRECTIVE ACTION-1. OVER-VOLTAGE CONDITION AND WIRING OF THE VALVE AND CONTROLLER CORRECTED AT ALL SITES. 2. THE VALVE IS IN PROCESS OF REDESIGN AND REQUALIFICATION, RELIABILITY CONTINUING SURVEILLANCE OF REDESIGN.						
PNEUMATIC-A/B TANK PRESS	91-08-067 DISCONNECT-RISE OFF	FAR 27-08189-1	390300	ETR	YES ROBERT SHAW FU NO LYON 1713-80001-1	090027
FAILURE MODE-CONTAMINATION-FOREIGN MATERIAL LOOSED IN THE AN CONNECTOR.						
CORRECTIVE ACTION-60/C INSTITUTED A PROCEDURE FOR FLOW CHECKING THE LINES IN THE FINAL STAGE OF PLUMBING CHECKOUT.						
PNEUMATIC-A/B TANK PRESS	91-08-067 RISE OFF DISCONNECT, TANK BENDING	FAR 27-08129-1	390300	ETR	YES ROBERT SHAW FU NO LYON 1713-80001-1	090403
FAILURE MODE-CONTAMINATION. FOREIGN MATERIAL LOOSED IN CONNECTOR. MATERIAL WAS A BLUE CUT OUT OF A PLASTIC CAP. CAUSE WAS NEGLIGENCE OF ASSEMBLY AND/OR TEST PERSONNEL.						
CORRECTIVE ACTION- A FLOW CHECK OF LINES DURING FINAL STAGE OF PLUMBING IS NOW MADE.						
PNEUMATIC-A/B TANK PRESS	91-08-088 MEDIUM CHANGEOVER VALVE, SEAL	FAR 7-08234-13	390421	ETR	YES B.M. HADLEYING NO	090029
FAILURE MODE-LEAK. INTERNAL-SEALS NICKED AND ONE SEAL COLD FLOWED TO THE EXTENT IT WAS NOT EFFECTIVE.						
CORRECTIVE ACTION-1. VALVE REPLACED BY VALVE OF DIFFERENT DESIGN AND MANUFACTURE. 2. USAGE OF VALVE CEASED WITH CAUTIONS. 3. NO RECOMMENDATIONS DUE TO LIMITED WARE REMAINING.						

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GENERAL DYNAMICS
ONVA-11 DIVISION

DIFFICULTIES REVEAL + PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	9TA4874/PS-401-00-03 CHECK VALVE-SOLENOID OPERATED	GRF	50 590413	13	YES NO	093809
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. DIFFICULTY WAS EXPERIENCED ON THE FIRST ATTEMPT TO EQUALIZE MISSILE BOTTLE PRESSURES AFTER THE RUN WHEN AT LEAST ONE OF THE SOLENOID ACTUATED CHECK VALVES FAILED TO OPERATE. AFTER MISSION DETAILING OPERATION OF THE VALVES WAS SATISFACTORY. POST-TEST CHECKS REVEALED THE PRESENCE OF MOISTURE IN THE SYSTEM WHICH COULD HAVE FROZEN THESE VALVES.</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START. ON FIRST ATTEMPT HELIUM BOTTLE PRESSURES COULD NOT BE EQUALIZED.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-POST-TEST CHECKS REVEALED MOISTURE IN SYSTEM WHICH COULD HAVE FROZEN THE VALVES. THIS MOISTURE PROBABLY ENTERED THE SYSTEM WHILE HELIUM BOTTLES WERE BEING CHANGED PRIOR TO THE TEST. THE SYSTEM WAS PURGED TO ELIMINATE ANY MOISTURE.</p>						
PNEUMATIC-A/B TANK PRESS	98-08-079 FUEL TANK PRESSURE RELIEF VALVE-O-7-08218-3 RING	FAR	590400	ETR	YES B. M. MADLEY 1 NO MC	098041
<p>FAILURE MODE-LEAK EXTERNAL O-RING AT THE SCREW ADJUSTMENT VARIABLE ORIFICE WAS PARTIALLY CUT OR SHEARED CAUSING EXCESSIVE LEAKAGE.</p> <p>CORRECTIVE ACTION-CONFIRMED-60/C INITIATED ACTION WITH VENDOR TO MONITOR THE ASSEMBLY OF THE VARIABLE ORIFICE. THIS FAILURE IS CONSIDERED AN ISOLATED CASE.</p>						
PNEUMATIC-A/B TANK PRESS	98-08-072 BOIL-OFF VALVE-CONTROLLER	FAR 27-08118-7	590400	WTR	YES STEWART WARNER NO 87/AL47	090018
<p>FAILURE MODE-OUT OF TOLERANCE. THE GEAR AND CAM TRAIN MATERIALS, TOLERANCE AND FINISHES WERE OF SUCH A NATURE AS TO CAUSE FRICTIONAL RESISTANCE BUILDUP THEREBY OVERLOADING THE MOTOR AND SWITCHES IN THE CONTROLLER RESULTING IN A FAILURE TO OPERATE DURING THE BLOWDOWN. (6 FAILURES OF THIS UNIT).</p> <p>CORRECTIVE ACTION-NEW DESIGN OF THE VALVE SUBSTITUTES A BECTOR GEAR AND PINION FOR THE GEAR AND CAM DESIGN. SPEED CONTROL OF THE VALVE ACTION WILL BE OBTAINED BY THE ADDITION OF A DIODE BY PASSING THE MOTOR GOVERNOR DURING THE CLOSING CYCLE. NEW DESIGN WILL BE EFFECTIVE IN FIELD USAGE WITHIN 30 DAYS.</p>						
PNEUMATIC-A/B TANK PRESS	98-08-073 REGULATOR, FUEL TANK PRESSURE	FAR 27-00001	30 590400	ETR	YES DO1 NO	
<p>FAILURE MODE-ERRATIC OPERATION. FUEL IN THE AIRBORNE FUEL TANK REGULATOR AND RELIEF VALVE AS A RESULT OF TURBULENCE AT THE SURFACE OF THE FUEL DURING THE WAITING SEQUENCE. THIS TURBULENCE WAS DUE TO SETTLING OF THE VENTED START VALVE GAS CHARGE INTO THE FUEL TANK.</p>						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION - FUTURE MISSILES WILL BE RETROFITTED SO THAT THE TEE AT THE TOP OF THE VENT IS ABOVE THE FUEL LEVEL AND IS ROTATED 90 DEGREES AND CANNOT BLOW INTO THE DUCT. INSTALLATION DRAWINGS ARE ALSO BEING MADE FOR A CHECK VALVE THAT WILL ALLOW LOW PRESSURE FLOW THRU THE VENT, BUT RESTRICT HIGH PRESSURE FLOW.						098016
PNEUMATIC-A/B TANK PRESS	32-401-A1-02 BOILOFF VALVE CONTROLLER	CAPTIVE 27-08152-7	20 500317	22 -1020	YES NO		092235
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE BOILOFF VALVE DID NOT OPEN AT 7-17 MINUTES. THE VALVE PRESSURE CONTROLLER 2.7 PSIG CONTACTS WERE FUSED TOGETHER.							
SYSTEM EFFECT-OPERATION TOO LOW. THE BOILOFF VALVE WOULD NOT CLOSE PREVENTING THE LOW TANK FROM GOING TO SEQUENCE B PRESSURE.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-REPLACE ENTIRE BOILOFF ASSEMBLY.							
PNEUMATIC-A/B TANK PRESS	30-08-049 BOILOFF VALVE	FAR 27-08204-101	136 500300	27R 57R	YES NO	YES PEACOCK	097635
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-UNIT REMAINED IN SHUT OFF POSITION WHEN ACTUATED, AND WOULD NOT RELIEVE TANK PRESSURE.							
CORRECTIVE ACTION-THIS ITEM WILL NOT BE USED ON D-SERIES VEHICLES. THIS UNIT WAS THE SECOND AND LAST B OR C-SERIES TO FAIL. NO FURTHER ACTION TAKEN.							
PNEUMATIC-A/B TANK PRESS	XC-7-219/P2-301-00-03 RISE OFF DISCONNECT VALVE	FLIGHT	SC 500220	12 137.2	YES YES		096670
FAILURE MODE-LEAK-EXTERNAL. HELIUM ULLAGE PRESSURE BEGAN A GRADUAL DECAY AT 137.2 SECONDS, FROM 60.3 PSIG TO 50.0 PSIG BY 142.3 SECONDS. THE CAUSE IS ATTRIBUTED TO THE LEAK IN THE FUEL DISCONNECT VALVE.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. HELIUM BEING USED TO REPLACE THE LOST FUEL FOLLOWED BY A MORE RAPID LEAK WHEN THE FUEL UNCOVERED THE DISCONNECT PORT.							
VEHICLE EFFECT-LOSS OF VEHICLE INTEGRITY. UNABLE TO MAINTAIN TANK PRESSURE RESULTS IN BULKHEAD REVERSAL AND MISSILE SELF DESTRUCTION.							
CORRECTIVE ACTION-NONE, SECONDARY FAILURE.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	D/P DATA SOURCE PART NUMBER	VEHICLE DATE D/P	DATE TIME D/P	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-070 REGULATOR, FUEL TANK PRESSURE	FAR 7-08217-3	9C 590200	ETR	YES NO	B.M. MADLEY INC NO 10542-3	899010
FAILURE MODE-CONTAMINATION CAUSED BY MERCURY AND METAL CHIPS AS WELL AS DRIED LUBRICANTS ON THE INTERIOR PARTS OF THE REGULATOR WHICH RESULTED OF EXCESSIVE VENTING THRU THE BLEED PORTS.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED 60/C HAS TAKEN ACTION TO PREVENT CONTAMINATION REOCCURRENCE BOTH AT VENDORS PLANT AND AT THE VALUATING TEST LAB. BY STRIDENT QUALITY CONTROL MEASURES.							
PNEUMATIC-A/B TANK PRESS	98-08-068 REGULATOR-FUEL TANK PRESSURE	FAR 7-08217-3	11B 590200	ETR	YES NO	MADLEY INC. NO 10542-3	897934
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE-REGULATOR WOULD NOT CONTROL PRESSURE WITHIN TOLERANCE.							
CORRECTIVE ACTION - NO FAILURE. OPERATION WAS WITHIN LIMITS. 60/C DIRECTED PERSONNEL TO PROVIDE MORE ACCURATE INSTRUMENTATION AND TO IMPROVE TEST PROCEDURES.							
PNEUMATIC-A/B TANK PRESS	98-08-063 FUEL TANK PRESSURE VALVE, DIAPHRAGM	FAR 7-08218-3	11B 590200	ETR	YES NO	MADLEY INC.	895132
FAILURE MODE-ERRATIC OPERATION-UNIT CRACKED (RELIEVED) AND CONTINUED TO RELIEVE UNTIL CHANGE-OVER TO EXTERNAL HELIUM SUPPLY. ERRATIC OPERATION CAUSED BY A HOLE IN THE CONTROLLER DIAPHRAGM.							
CORRECTIVE ACTION-CAUSE OF FAILURE NOT CONFIRMED-VENDOR USING NEW SILICONE RUBBER, TYPE ED701. NO RETROFIT OF UNITS IN THE FIELD.							
PNEUMATIC-A/B TANK PRESS	98-08-065 HELIUM CHANGE-OVER VALVE, SEAL	FAR 7-08234-13	9B 590200	ETR	YES NO	HYDROMATICS, I NO INC.	895131
FAILURE MODE-LEAK INTERNAL-LEAK CAUSED BY A FRACTURE OF THE SEAL ON THE HIGH PRESSURE SIDE.							
CORRECTIVE ACTION-NONE-VALVE IS OBSOLETE, AND USAGE IN VEHICLE 98 IS THE LAST OF ITS TYPE. DIFFERENT VALVE WILL BE USED ON C-SERIES VEHICLES.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	ZC-7-218/P2-303-00-04 PRESSURE REGULATOR, FUEL TANK	FLIGHT	4C 990127	12 107	YES NO		093633
<p>FAILURE MODE-FAIL DURING OPERATION-AT 107 SECONDS, FUEL TANK PRESSURE EXHIBITED AN ABRUPT DECAY FROM 30 PSIG TO 40 PSIG AT BOOSTER CUTOFF, DECAYING FURTHER TO 35.5 PSIG DURING SUSTAINER PHASE. ALTHOUGH OTHER POSSIBILITIES WERE CONSIDERED, A MALFUNCTION OF THE FUEL TANK PRESSURE REGULATOR APPEARS TO BE THE MOST LIKELY CAUSE OF THE PROBLEM.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. BULKHEAD INTEGRITY WAS MAINTAINED DURING POWERED FLIGHT, HOWEVER DATA INDICATES THE POSSIBILITY OF BULKHEAD RUPTURE AT 380 SECONDS WHEN BOTH THE LOX AND FUEL TANK PRESSURES INDICATED 29.8 PSIG.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>							
PNEUMATIC-A/B TANK PRESS	NOTS 14-401-01-20/14-401-01-20 TANK HELIUM PRESSURE SWITCH	CAPTIVE	590120	1-4	YES NO		093140
<p>FAILURE MODE-ERRATIC OPERATION. REGULATION LIMITS ON LOX AND FUEL TANK PRESSURE SWITCHES SHIFTED DOWN 3 PSI (LOW) AND NO 4 PSI (FUEL) DURING THE TEST AND CYCLED AT A FREQUENCY OF 0.5 CPS.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-CONTROL TANK PRESSURES WITH PRESSURE PROGRAMMER FOR FOLLOWING TESTS.</p>							
PNEUMATIC-A/B TANK PRESS	98-08-007 REGULATOR-FUEL TANK PRESSURE	FAR 7-08217-13	156 590100	ETR	NO NO	MADLEY INC. NO 10542-3	097833
<p>FAILURE MODE-CUT OF TOLERANCE. UNIT CONTINUED CYCLING, RISING TO AND EXCEEDING THE CRACKING PRESSURE OF THE RELIEF VALVE.</p> <p>CORRECTIVE ACTION-NO FAILURE. OPERATION WAS WITHIN LIMITS-60/C DIRECTED PERSONNEL TO PROVIDE MORE ACCURATE INSTRUMENTATION AND TO IMPROVE TEST PROCEDURES.</p>							
PNEUMATIC-A/B TANK PRESS	98-08-004 HELIUM-HUT OFF VALVE, BOLTS	FAR 7-08236-13	4C 590100	ETR	YES NO	MADLEY INC.	
<p>FAILURE MODE-LEAK EXTERNAL-LEAKAGE AT VALVE BODY IN BOLT AREA. CAUSE OF LEAK DETERMINED TO BE INADEQUATE TORQUING OF BOLT BOLTS.</p> <p>CORRECTIVE ACTION-VENDOR AND 60/C RECHECKED ALL UNITS FOR PROPER TORQUING OF VALVE BODY BOLTS. UNITS NOT MEETING RE</p>							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
QUIREMENTS ARE TO BE REJECTED.							028764
PNEUMATIC-A/B TANK PRESS	86-08-082 MANUAL SHUTOFF VALVE	FAR 7-08233-11	2C 860100	ETR	YES NO	ROBERTMAN FUL TON	099533
FAILURE MODE-LEAK EXTERNAL CAUSING LOSS IN FUEL TANK PRESSURE DUE TO VALVE NOT BEING FULLY CLOSED WHEN LOCKING DOGS WERE INSERTED.							
CORRECTIVE ACTION-60/C REPLACED THESE VALVES WITH ONE NOT SUSCEPTABLE TO HUMAN ERROR. THESE NEW VALVES INCORPORATE SPRING LOADED PIN LOCK.							
PNEUMATIC-A/B TANK PRESS	86-08-082 MANUAL SHUTOFF VALVE	FAR 7-08233-11	2C 860100	ETR	NO NO	FULTON 242-20047	091166
FAILURE MODE-LEAK. VALVE LEAKED PAST BUTTERFLY CAUSING A LOSS OF FUEL TANK PRESSURE. CAUSE WAS HUMAN ERROR. VALVE WAS NOT FULLY CLOSED WHEN THE LOCKING DOGS WERE INSERTED. THE DOGS WHEN FORCED AGAINST THE CAN, WERE CRUSHED.							
CORRECTIVE ACTION-CURRENT PRODUCTION MISSILES ARE USING A NEW VALVE NOT SUSCEPTABLE TO HUMAN ERROR.							
PNEUMATIC-A/B TANK PRESS	98-08-081 REGULATOR-FUEL TANK PRESSURE	FAR 7-08217-3	138 542900	ETR	YES NO	HADLEY INC. 10542-8	097836
FAILURE MODE-ERRATIC OPERATION-REGULATOR FAILED TO REGULATE TANK PRESSURE WITHIN SPECIFIED LIMITS, AND ALLOWED THE RELIEF VALVE TO CYCLE CONTINUOUSLY.							
CORRECTIVE ACTION-NO FAILURE-WITHIN LIMITS-60/C DIRECTED PERSONNEL TO PROVIDE MORE ACCURATE INSTRUMENTATION AND TO IMPROVE TEST PROCEDURES AT THE TEST SITES.							
PNEUMATIC-A/B TANK PRESS	97A841A/P1-803-00-10	PMF	108 851212	11/ETR PLUS 8	NO NO		093408
FAILURE MODE-OUT OF TOLERANCE. LOG TANK PRESSURE DECATED FROM 26.3 PSIG AT IGNITION TO 19.4 PSIG AT SHUTDOWN. INVESTIGATION REVEALED NO FAULTY COMPONENTS.							
SYSTEM EFFECT-OPERATION TOO LOW.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-INVESTIGATION. NO COMPONENTS WERE REPLACED FOR FLIGHT.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	98-08-081 REGULATOR-FUEL TANK PRESSURE	PAR 7-00217-3	138 301201		YES NO	B-M-HADLEY	091433
FAILURE MODE-OUT OF SPECIFICATION. REGULATOR DID NOT MAINTAIN TANK PRESSURE WITHIN SPECIFIED LIMITS AND ALLOWED RELIEF VALVE TO CYCLE CONTINUOUSLY. DIF ASSEMBLY DID NOT REVEAL A DEFINITE CAUSE.							
CORRECTIVE ACTION-NOT CONFIRMED. MORE ACCURATE AND IMPROVED TEST PROCEDURES WERE PROVIDED AT THE SITES.							
PNEUMATIC-A/B TANK PRESS	FTA 4410/P4-201-00-12 REGULATOR-GAS	FRF	120 301121	14/ETR -28	YES NO		091140
FAILURE MODE-FAIL DURING OPERATION. THE LOW TANK PNEUMATIC REGULATOR FAILED TO LOCK UP.							
SYSTEM EFFECT-OPERATION TOO LOW. THE BOOSTER TANKS HELIUM BOTTLE PRESSURE DROPPED ABRUPTLY TO 2,300 PSI.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. CUTOFF CALLED BY PRESSURIZATION AT MINUS 16 SECONDS AND HOLD FOR 10 MINUTES PRIOR TO TEST TERMINATION.							
CORRECTIVE ACTION-REGULATOR WAS REPLACED AND SYSTEM RECHECKED SATISFACTORILY.							
PNEUMATIC-A/B TANK PRESS	ZC-7-208/P4-201-00-08 LOW TANK PRESSURE REGULATOR	FLIGHT	08 300914	14 210	YES NO		090338
FAILURE MODE-ERRATIC OPERATION. SURGE IN LOW TANK PRESSURE (28.9 PSI) AT 210 SECONDS TO 29.7 PSI AT 225 SECONDS) ATTRIBUTED TO EARLY OPENING WIDE OF THE LOW TANK PRESSURE REGULATOR FOR A 3-SECOND PERIOD. MAY HAVE BEEN A TEMPERATURE PROBLEM CAUSED BY THE HIGH TEMPERATURE SUSTAINER HELIUM.							
SYSTEM EFFECT-ERRATIC OPERATION. EFFECT OF REGULATOR OPENING WIDE WAS SEEN AS A RAPID DECAY OF SUSTAINER TANK HELIUM SUPPLY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN. MISSILE NO LONGER USES SUSTAINER HELIUM SUPPLY FOR TANK PRESSURIZATION.							
PNEUMATIC-A/B TANK PRESS	PTA2230/P4-202-00-08 RELIEF VALVE	COUNTDOWN	08 300911	14 -800	YES NO		090804
FAILURE MODE-FAIL DURING OPERATION. RELIEF VALVE WAS RELIEVING PRESSURE TO THE HELIUM BOTTLES.							
SYSTEM EFFECT-OPERATION TOO LOW.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 15 MINUTE HOLD.							
CORRECTIVE ACTION-ADJUSTED VALVE.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	ZC-7-204/P1-203-00-03 REGULATOR	FLIGHT	55 560828	11 130	YES NO	000000
<p>FAILURE MODE-FAIL TO CEASE OPERATION AT PRESCRIBED TIME. HELIUM PRESSURIZATION TO THE LOX TANK SHOULD HAVE BEEN CUT OFF AT ABOUT 120 SECONDS WHEN LOX TANK PRESSURE EXCEEDED 20 PSIA. FURTHER MALFUNCTION INDICATED WHEN HELIUM FLOW TO LOX TANK CONTINUED AFTER SECO AT SAME RATE AS SUSTAINER PHASE.</p> <p>SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. 8.7 POUNDS OF HELIUM WERE USED FROM SUSTAINER LOX TANK PRESSURIZATION SUPPLY WHEN ONLY 5.8 POUNDS WERE SPECIFIED. IT SHOULD BE NOTED THE BOOSTER HELIUM TANK SUPPLY USAGE WAS 75 POUNDS VERSUS A EXPECTED 66 POUNDS FOR BOOSTER PHASE TANK PRESSURIZATION.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN</p>						
PNEUMATIC-A/B TANK PRESS	AZ-7-079/32-210-C4-01 HELIUM CHANGE OVER VALVE, MOTOR	CAPTIVE	18 560822	32 9:55	YES NO	003144
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE PNEUMATIC CHANGE-OVER VALVE FAILED TO OPERATE. POST TEST INSPECTION REVEALED A BROKEN RELAY LINE IN THE CHANGE-OVER VALVE CIRCUIT WHICH INDICATED OVERLOADING OF THE MOTOR.</p> <p>SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. TANK PRESSURES DECAYED RAPIDLY FOLLOWING ENGINE START.</p> <p>VEHICLE EFFECT-PREMATURE PROPUSSION CUTOFF. OBSERVER CUTOFF WHEN LOX TANK PRESSURE DROPPED TO 20.5 PSIG.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
PNEUMATIC-A/B TANK PRESS	ZD-7-079/32-213-C4-01 HELIUM CHANGE OVER VALVE, MOTOR	CAPTIVE	18 560811	32 3:03	YES NO	000006
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE PNEUMATIC CHANGE OVER VALVE FAILED TO OPERATE. POST TEST INSPECTION REVEALED THAT THE MOTOR FAILED TO OPERATE.</p> <p>SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. TANK PRESSURES DECAYED RAPIDLY FOLLOWING ENGINE START.</p> <p>VEHICLE EFFECT-PREMATURE PROPUSSION CUTOFF. OBSERVER CUTOFF WHEN LOX TANK PRESSURE DROPPED TO 13 PSIG.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
PNEUMATIC-A/B TANK PRESS	ZC-7-204/P3-204-00-4 LOX TANK PRESSURE REGULATOR	FLIGHT	48 560802	13 0	YES NO	000006
<p>FAILURE MODE-OUT OF EXPECTED TEST VALUE. DURING BOOSTER AND SUSTAINER PHASE PROPELLANT TANK PRESSURIZATION HELIUM WAS USED AT A RATE HIGHER THAN EXPECTED AND AT 130 SECONDS THE LOX TANK PRESSURE INCREASED ABOVE UPPER LIMIT, POSSIBLY DUE TO A LOX TANK PRESSURE REGULATOR MALFUNCTION.</p>						

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GENERAL D. HICKS
COMNAVIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY-TOTAL WEIGHT OF HELIUM USED DURING BOOSTER PHASE WAS 79.5 LBS., 14.2 LBS. MORE THAN EXPECTED. DURING SUSTAINER PHASE 13 LBS. OF HELIUM WERE USED AS COMPARED TO 4 LBS. ANTICIPATED. THE RATE OF USAGE INCREASED ABRUPTLY AT 155 SECONDS.						
VEHICLE EFFECT-NONE- NO DETRIMENTAL EFFECTS WERE OBSERVED ON VEHICLE PERFORMANCE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	ZC-7-200/P1-208-003 TANK PRESSURE RELIEF VALVE	FLIGHT	38 590719	11 0	YES YES	098408
FAILURE MODE-EXTERNAL LEAK. BOOSTER PHASE HELIUM CONSUMPTION WAS HIGHER THAN NORMAL POSSIBLY DUE TO LEAKAGE THROUGH A TANK RELIEF VALVE OR A QUICK DISCONNECT.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY-THE LEAK COULD HAVE RESULTED IN DEPLETION OF THE BOOSTER HELIUM SUPPLY IF THE FLIGHT HAD NOT PREMATURELY TERMINATED AT 41 SECONDS. IT SHOULD BE NOTED THAT PROPELLANT TANK PRESSURES WERE PROPERLY MAINTAINED UNTIL LOSS OF THE VEHICLE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	ZC-7-200/P1-208-003 DISCONNECT-RISE-OFF	FLIGHT	38 590719	11 0	YES YES	098408
FAILURE MODE-EXTERNAL LEAK. BOOSTER PHASE HELIUM CONSUMPTION WAS HIGHER THAN NORMAL. POSSIBLY DUE TO LEAKAGE THROUGH A QUICK DISCONNECT OR A TANK RELIEF VALVE.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY-THE LEAK COULD HAVE RESULTED IN DEPLETION OF THE BOOSTER HELIUM SUPPLY IF THE FLIGHT HAD NOT PREMATURELY TERMINATED AT 41 SECONDS. IT SHOULD BE NOTED THAT PROPELLANT TANK PRESSURES WERE PROPERLY MAINTAINED UNTIL LOSS OF THE VEHICLE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	RTA4102/P1-207-00-3 PANEL LIGHT	COUNTDOWN	38 590719	11 -6	YES NO	098408
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE BOOSTER TANK INTERNAL PRESSURIZATION PANEL LIGHT FAILED TO COME ON.						
SYSTEM EFFECT OPERATION DOES NOT START. INDICATIONS WERE THAT THE BOOSTER TANK PRESSURIZATION SYSTEM DID NOT TRANSFER TO INTERNAL.						
VEHICLE EFFECT-COUNTDOWN DELAYED. 34 MINUTES HOLD AND 69 MINUTE RECYCLE AFTER CUTOFF INITIATED.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B TANK PRESS	FTA410E/PI-207-00-3 SOLENOID OPERATED CHECK VALVE	COUNTDOWN	38 880718	11 -4820	YES NO		897605 897606
FAILURE MODE-FAIL DURING OPERATION. SOLENOID OPERATED CHECK VALVE IN THE SUSAINER TANKS HELIUM BOTTLE SYSTEM FAILED TO SEAT.							
SYSTEM EFFECT-OPERATION DOES NOT START. AIRBORNE HELIUM BOTTLE COULD NOT BE PRESSURIZED BECAUSE SOLENOID OPERATED CHECK VALVE FAILED TO SEAT.							
VEHICLE EFFECT-COUNTDOWN DELAY.							
CORRECTIVE ACTION-CYCLED DUMP VALVES TO BREAK VALVE LOOSE. HOLD TO COMPLETE BOTTLE PRESSURIZATION.							
PNEUMATIC-A/B TANK PRESS	FTA408E/PI-208-00-3 SOLENOID OPERATED CHECK VALVE	COUNTDOWN	38 880715	11 -3600	YES NO		897645
FAILURE MODE-FAIL DURING OPERATION. CHECK VALVE STUCK IN PARTIALLY OPEN POSITION. (FAILED TO SEAT).							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY-PRESSURE COULD NOT BE MAINTAINED IN THE SUSAINER TANKS HELIUM BOTTLE FOLLOWING REMOVAL OF EXTERNAL PRESSURE SOURCE. IN ADDITION, FAILED VALVE RESTRICTED HELIUM FLOW DURING PRESSURIZATION CYCLE.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. 30 MINUTE HOLD FOLLOWED BY TEST ABORT.							
CORRECTIVE ACTION-VALVE REPLACED.							
PNEUMATIC-A/B TANK PRESS	ZC-7-097/P2-104-00-18 LOW TANK PRESSURE REGULATOR	FLIGHT	10A 880803	12 -1.6	YES NO	WHITTAKER	898681
FAILURE MODE-FAIL DURING OPERATION. BELIEVED THAT THE LOW TANK PRESSURE REGULATOR STUCK PART WAY OPEN AT OR BEFORE TRANSITION TO AIRBORNE AND REMAINED OPEN THEREAFTER.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. THE LOW TANK PRESSURE RELIEF VALVE OPENED TO ATMOSPHERE AND DRAINED THE HELIUM SUPPLY. BOTTLE PRESSURE AT ENGINE SHUTDOWN WAS 100 PSI INSTEAD OF THE EXPECTED 800 PSI. APPROXIMATELY 35 POUNDS OF HELIUM WAS DISCHARGED TO ATMOSPHERE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-WHITTAKER REGULATORS WERE REPLACED BY MADLEY REGULATORS AT THE START OF SERIES B TESTING.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B TANK PRESS	PTA2888/P2-102-00-12 REGULATOR	PRF	10A 960322	12/ETR	YES NO	
<p>FAILURE MODE-FAIL DURING OPERATION. AFTER CHANGEOVER TO INTERNAL PNEUMATICS, HELIUM FLOW INTO THE FUEL TANK CEASED AND TANK PRESSURE STARTED TO DECAY. ALSO LOX TANK PRESSURE DECAYED TO BELOW REDLINE VALUE RESULTING IN A CUTOFF CALL OUT.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. TANK PRESSURES DECAYED WITH LOX GOING BELOW REDLINE.</p> <p>VEHICLE EFFECT-PREATURE PROPULSION CUTOFF. DURATION OF STATIC FIRING WAS 28.01 SECONDS WHEN 38 SECONDS HAD BEEN PLANNED.</p> <p>CORRECTIVE ACTION-REPLACED AIRBORNE REGULATORS.</p>						
PNEUMATIC-A/B TANK PRESS	PTA2379/P2-101-00-12 LOX PRESSURE DUCT	PRF	11A 960210	12 -3100	YES NO	
<p>FAILURE MODE-STRUCTURAL. DEEP ABRASIONS WERE FOUND IN THE LOX TANK PRESSURIZATION LINE.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. 95 MINUTE HOLD.</p> <p>CORRECTIVE ACTION-AFTER INSPECTION OF THE LINE IT WAS DECIDED TO INSTALL A STEEL AND ARRESTOR FILLER BETWEEN THE LOX TANK PRESSURIZATION LINE AND AN ADJACENT FUEL LINE TO HOLD VIBRATION TO A MINIMUM ON THIS OPERATION. THE LINE WAS THEN REPLACED PRIOR TO LAUNCH.</p>						
PNEUMATIC-A/B TANK PRESS	ZC-7-095/P4-102-00-13 TUBING	FLIGHT	13A 960207	14 117.4	NO NO	
<p>FAILURE MODE-STRUCTURAL. A HELIUM PRESSURIZATION LINE AND/OR AN INSTRUMENTATION LINE IN THE VICINITY OF THE PNEUMATIC MANIFOLD WAS SEVERED SOMEWHERE DOWNSTREAM OF THE CONTROL HELIUM SUPPLY BOTTLES. THE POSSIBLE DISINTEGRATION OF THE C D2 GEAR BOX ON THE TURBOPLAP COULD HAVE CAUSED THE RUPTURE IN THE PNEUMATIC CONTROL SYSTEM.</p> <p>SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. THE PNEUMATIC SYSTEM WAS UNABLE TO MAINTAIN PRESSURE TO THE BOOSTER REGULATOR REFERENCE, ABOVE LOWER, WHICH CONTROLS THE OUTPUT OF THE B66 LOX REGULATOR.</p> <p>VEHICLE EFFECT-PREATURE BOOSTER ENGINE SHUTDOWN. LOSS OF PNEUMATIC PRESSURE TO THE B66 LOX REGULATOR CAUSED PLANE-OUT OF THE B66 AND SUBSEQUENT CESSATION OF BOOSTER OPERATION.</p> <p>CORRECTIVE ACTION-NONE.</p>						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B TANK PRESS	BC-7-091-10A/PE-107-00-10	FLIGHT	10A 590110	12	YES YES		003105
<p>FAILURE MODE-OUT OF TOLERANCE. PRIOR TO LIFTOFF THE GROUND PNEUMATIC PRESSURIZATION SUPPLY OVERPRESSURIZED THE LOW TANK BY 3.5 LBS. (29.5 PSIG). ON TRANSITION TO AIRBORNE PNEUMATICS THE PRESSURE RETURNED TO NORMAL.</p> <p>SYSTEM EFFECT-OPERATION TOO HIGH.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-NONE.</p>							
PNEUMATIC-A/B TANK PRESS	PTA2344/P4-101-00-12 REGULATOR GAS	FRP	12A 571211	14 0	YES NO		003307
<p>FAILURE MODE-FAIL DURING OPERATION. FROM FUEL TANK ULLAGE PRESSURE DATA IT WAS DETERMINED THAT THE AIRBORNE FUEL TANK PRESSURE REGULATOR FAILED DURING THIS OPERATION. THE FUEL TANK PRESSURE HAD DECAYED 50 PSIG AT 10 SEC. AND WAS AT 44 PSIG AT 55 SECONDS (ENGINE SHUTDOWN).</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START. FUEL TANK PRESSURIZATION REGULATOR OPERATION DID NOT START DURING ENGINE RUN.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-REPLACED REGULATOR.</p>							
PNEUMATIC-A/B TANK PRESS	PTA2289/P2-100-01-10	COMPOSITE-FRD/DPL	10A 571119	12/ETR -87	YES NO		008570
<p>FAILURE MODE-OUT OF TOLERANCE. PRESSURIZATION SYSTEM COULD NOT ACHIEVE MORE THAN 90 PSIG IN THE FUEL TANK.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. FUEL TANK PRESSURE WAS LOWER THAN DESIRED.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED. DURATION OF HOLD TIME INDETERMINATE.</p> <p>CORRECTIVE ACTION-HOLD TO PRESSURIZE TANK TO PRESCRIBED VALUE.</p>							
PNEUMATIC-A/B TANK PRESS	DW-348/1A-104-03-02A LOW TANK PRESSURE REGULATOR	CAPTIVE	2A 570703	1A -2.9	YES NO		
<p>FAILURE MODE-OUT OF TOLERANCE. LOW TANK HELIUM PRESSURE WAS SLIGHTLY ABOVE (A MAXIMUM OF 1.8 PSIG) THE PRESCRIBED 27.5 PSIG UPPER LIMIT FROM START UNTIL 0.6 SECONDS, THEN REMAINED WITHIN THE DESIRED RANGE OF 20 TO 27.5 FOR BALANCE OF TEST.</p> <p>SYSTEM EFFECT-NONE.</p>							

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GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	EC-7-084-4A/P4-102-00-04 HELIUM CHANGE-OVER VALVE	FLIGHT 7-08234-101	4A 570611	14 -6.09	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. MOTOR OPERATED CHANGE-OVER VALVE FAILED TO TRANSFER PNEUMATICS ON INTERNAL PRESSURE.						
SYSTEM EFFECT-OPERATION DOES NOT START. NO PRESSURIZATION TO MAIN MISSILE TANKS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE TWO MOTOR OPERATED VALVES (TANKS AND CONTROLS) WERE REMOVED SO LAUNCH CONTROL WOULD NOT RECEIVE A COMPLETE SIGNAL UNLESS BOTH VALVES ARE FULL OPEN.						
PNEUMATIC-A/B TANK PRESS	EN-4063-1-107-3/D-3 LOX AND FUEL TANK PRESSURE REGULATOR	CAPTIVE	2A 570525	8-1	YES NO	
FAILURE MODE-OPERATIC OPERATION. BOTH PROPELLANT TANK PRESSURE REGULATORS EXHIBITED UNDESIRABLE CHARACTERISTICS EVEN THOUGH TANK PRESSURES WERE MAINTAINED WITHIN THE DESIRED LIMITS.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE REGULATORS WILL BE REMOVED FROM THE MISSILE, INSPECTED BY THE MANUFACTURER AND RE REPLACED OR REPAIRED.						
PNEUMATIC-A/B TANK PRESS	2B-7-027 SUMMARY PART 2 TEST 113-1 CAPTIVE TANK-HEAT EXCHANGER INLET TUBE		570502	1-4 1.63	YES NO	
FAILURE MODE-STRUCTURAL-THE AIRBORNE PNEUMATIC SYSTEM TANK HEAT EXCHANGER INLET TUBE RUPTURED DURING THE TEST.						
SYSTEM EFFECT-NONE-THE RUPTURED TANK HEAT EXCHANGER INLET TUBE CAUSED NO DIFFICULTY.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B TANK PRESS	24-403-93-24 FUEL TANK PRESSURE REGULATOR	CAPTIVE	24D 59902	3-2 109.4	YES FLUIDGENICS NO	
FAILURE MODE-FAIL DURING OPERATION. THE FUEL TANK REGULATOR FAILED CLOSED DURING THE SUSTAINMENT PHASE. THE FUEL TANK PRESSURE DECAYED FROM 99.8 PSIG AT 100.6 SEC TO 82 PSIG AT CUTOFF. THE FAILURE OF THE VALVE TO OPERATE AFTER 100.6						

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
SECS MAY HAVE RESULTED FROM THE USE OF ALUMINUM POPPET.							896001
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE ALUMINUM POPPET IN THE REGULATOR WAS REPLACED BY A STEEL POPPET.							
PNEUMATIC-A/B TANK PRESS	A9-08-200 CONTAINPRESSURERELIEFVALVE,POPPET	FAR 27-08103-3	0	FACTORY	YES B.M. MADLEY NO		897894
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR EXTERNAL LEAKAGE AT THE SECONDARY CONTROLLER. EXAMINATION REVEALED A PIECE OF PLASTIC MATERIAL 0.125 X 0.040 X 0.010 INCHES BETWEEN THE POPPET AND ITS SEAT. UPON REMOVAL OF THE CONTAMINANT THE VALVE OPERATED SATISFACTORILY. THE PLASTIC MATERIAL WAS THE SAME AS USED IN DUST CAPS.							
CORRECTIVE ACTION-VENDOR NOTIFIED OF FAILURE AND CAUSE. INSPECTION HAS BEEN IMPROVED AND USE OF DUST CAPS PRIOR TO CONTROLLER ASSEMBLY HAS BEEN ELIMINATED.							
PNEUMATIC-A/B TANK PRESS	A-90-08-305AF REGULATOR	FAR 27-08102-7	1280	1-1	NO B.M. MADLEY NO 10709-23		893380
FAILURE MODE-OUT OF TOLERANCE. THE FUEL TANK PRESSURE REGULATOR WAS SUBMITTED FOR ANALYSIS TO DETERMINE IF INTERNAL DAMAGE HAD OCCURRED AFTER THE CONTROLLER DIAGNOSIS HAD BEEN SUBMITTED TO A DIFFERENTIAL PRESSURE OF 60 PSIG. ANALYSIS IS REVEALED ERRATIC OPERATION AND LOW FLOW. THIS WAS DUE TO USE OF A WRONG SIZE ORIFICE DURING TESTING. NO DAMAGE WAS FOUND ON INTERNAL COMPONENTS.							
CORRECTIVE ACTION-NOT CONFIRMED. NOTIFIED WITH THAT A DIFFERENTIAL PRESSURE OF 60 PSIG DID NOT DAMAGE DIAGNOSIS.							
PNEUMATIC-A/B TANK PRESS	A-90-08-3072F HELIUM CHANGE OVER VALVE	FAR 27-08118-11	44F	WALKER	YES ROBERTSHAW FUL TON NO 1098-22001		894007
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. VALVE REMAINED OPEN WHEN AN INDICATION WAS GIVEN THAT VALVE HAD CLOSED. CAUSE NOT KNOWN. POSSIBLE CAUSE COULD HAVE BEEN AN ELECTRICAL WIRING ERROR.							
CORRECTIVE ACTION-UNKNOWN. FAILURE NOT CONFIRMED.							

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B 7/MM PRESS	SLV-AS-08-3234F RELIEF VALVE-FUEL TANK PRESSURE	FAR 27-08104-9	1114	FACTORY	YES	HADLEY NO 10528-9	094113
FAILURE MODE-OUT OF TOLERANCE. RELIEF VALVE RESEATED TOO LOW-68.25. MINIMUM ALLOWABLE PER PROCEDURE 89-92075-1 IS 8 0.5 PSIG.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. RAR SLV-AB-08-3080 RECOMMENDED THAT THE LOW RESEAT PROBLEM BE REVIEWED BY 60/C DESIGN, SINCE ECP 7801 WHICH LOWERED RESEAT VALUE HAS BEEN REJECTED.							
PNEUMATIC-A/B CONTROL PRESS	CT-98-08-097 RESTRICTOR, O RING	FAR 27-08167-3	2900 640417	360	YES	DEL MP6. NO 10082	090453
FAILURE MODE-EXTERNAL LEAK. UNIT FOUND TO BE LEAKING AT THE BODY JOINT OF THE TWO PIECE HOUSING. PRESSURE AT TIME L EAR WAS DISCOVERED WAS 1300 PSIG (HELIUM).							
CORRECTIVE ACTION-CONFIRMED FAILURE. DISCREPANCY WAS CAUSED A DEFECTIVE O RING DAMAGED BEFORE OR DURING ITS INSTALL ATION INTO THE RESTRICTOR. VENDOR TO USE GREATER CAUTION WHEN INSTALLING O RINGS.							
PNEUMATIC-A/B CONTROL PRESS	83-4MO-01-72 TUBING-RIDGID,BNUT	COMPOSITE-TRD/DPL 72D 640113	ABEND-3	YES	NO		090140
PNEUMATIC-A/B CONTROL PRESS	27A4813 MOHEASSY,HEATEXCHANGER	UTP-PET 27-08218-3	831222	60/C	YES	FLEX. METAL MO 3E H8-490-R	090347
FAILURE MODE-STRUCTURAL-CRACKS DEVELOPED DURING VIBRATION TESTING PERMITTING PRESSURE DROP.							
CORRECTIVE ACTION-FAILURE RESOLUTION NOT COMPLETED.							
PNEUMATIC-A/B CONTROL PRESS	27A4813 MOHE ASSY. HEAT EXCHANGER	UTP-PET 27-08218-17	831109	60/C	YES	FLEX METAL MO E H8481-17U	
FAILURE MODE-OUT OF TOLERANCE NUMEROUS DIMENSIONAL AND OTHER OUT OF TOLERANCES WERE NOTED DURING EXAMINATION OF PRO DUCT.							

15 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-REJECT THIS TEST SPECIMEN TO VENDOR. VENDOR TO INSURE CORRECTLY MANUFACTURED ARTICLE. REINSPECT P ET LOT AND START TEST ON ACCEPTABLE UNIT.						
PNEUMATIC-A/B CONTROL PRESS	SLV-90-08-3830P BLEED CHECK VALVE	FAR 27-08250-1	7110 050903	PALCP-A	YES NO	CIRCLE SEAL NO P9-649
FAILURE MODE-EXTERNAL LEAKAGE AT THE BODY SEAL JOINT. VALVE END NOT TIGHTENED TO THE BODY WITH THE CORRECT TORQUE HUS NOT COMPLETELY SQUEEZING THE ALUMINUM GASKET.						
CORRECTIVE ACTION-PER FAR SLV-90-08-3826 GO/A REQUESTED THAT VENDOR BE NOTIFIED OF THIS PROBLEM AND THAT VENDOR TAR E ACTION TO PREVENT RECURRENCE. VALVES AT 60/C ARE TO BE CHECKED FOR PROPER TORQUE BETWEEN END AND BODY AND THEN APP LY TORQUE PAINT.						
PNEUMATIC-A/B CONTROL PRESS	GOC/84F83-004/L3-701-00-7109 BLEED VALVE, SCREW	FLIGHT	7106 050123	2-3 0	YES NO	
FAILURE MODE-EXTERNAL-LEAK. LOSS OF CONTROLS SYSTEM HELIUM AS RESULT OF LEAKAGE AT UNKNOWN POINT- POSSIBLE LEAK POI NTS CONSIDERED ARE -1) MANUAL BLEED VALVE ON BOOSTER CONTROL VALVE REGULATOR, 2) PRESSURE LINES TO THE B1 AND B2 MAI N LOX AND FUEL VALVES, THE BOOSTER GAS GENERATOR AND THE BOOSTER LOX REFERENCE REGULATOR.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. EXCESSIVE DECAY RATE OF CONTROLS BOTTLE PRESSURE DURING BOOSTER PHASE.						
VEHICLE EFFECT-NONE. ALTHOUGH THERE WAS EXCESSIVE DECAY DURING BOOSTER PHASE, THE CONTROLS BOTTLE PRESSURE AFTER BE CO WAS ADEQUATE TO PERFORM THE REMAINING PRESSURIZATION FUNCTIONS.						
CORRECTIVE ACTION-A STEP TO VERIFY THAT THE 188 BLEED VALVE SET SCREW IS CLOSED HAS BEEN ADDED TO THE PRE-COUNT PRO CEDURES. EXISTING PNEUMATIC AND PROPULSION SYSTEM LEAK CHECK PROCEDURES WERE REVIEWED AND WERE CONSIDERED ADEQUATE.						
PNEUMATIC-A/B CONTROL PRESS	LV-90-08-3217P BLEED CHECK VALVE-HELIUM	FAR 27-08250-1	3330 041014	2-3 PALC	YES NO	CIRCLE SEAL NO P9-649
FAILURE MODE-EXTERNAL LEAKAGE. VALVE LEAKED 350 C.C AT 3000 PSIG. EXACT CAUSE NOT KNOWN. COULD HAVE BEEN DUE TO WAR SINAL TORQUE, COLD HARDENING OF GASKET OR VALVE ASSEMBLY TORQUE CHANGES DURING REMOVAL OF VALVE.						
CORRECTIVE ACTION-FAILURE CONFIRMED. NO CORRECTIVE ACTION APPLICABLE DUE TO INDEFINITE CAUSE OF LEAKAGE.						

13 JUN 1966

GENERAL D. HICKS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B CONTROL PRESS	27A3726 CONTROL BOTTLE STAGING DISCONNECT, 27-00122-3 SUSTAINER HALF	UTP-PET	640821	60/C	YES	MADLEY NO 10715-9	002331
FAILURE MODE-EXTERNAL LEAK. DURING OSCILLATION CYCLES FOLLOWING OPERATING VIBRATION EXTERNAL LEAKAGE RANGED FROM 23 TO 58 SCIN. ALLOWABLE LEAKAGE IS 25 SCIN. UNIT WAS OPERATING AT -0.1 DEG F STABILIZED. REF. 8/N 404-2280 T.M. NO. 1.							
CORRECTIVE ACTION-NONE. PET LOT ACCEPTED. LEAKAGE RATES WERE NOT CONSIDERED MAJOR. REF. FPR NR F-5160-SWT. AND FPR NO. FR 654-2-384.							
PNEUMATIC-A/B CONTROL PRESS	27A3313 CONTROL BOTTLE STAGING DISCONNECT, 27-00122-3 SUSTAINER HALF	UTP-PET	640731	60/C	YES	MADLEY NO 10715-9	002332
FAILURE MODE-EXTERNAL LEAK. DURING HIGH TEMPERATURE PROOF CYCLE THE EXTERNAL LEAKAGE WAS 196 AND 58 SCIN VS ALLOWABLE SPEC LEVEL OF 25 SCIN. REF 8/N 404-2281 T.M. NO 1.							
CORRECTIVE ACTION-TESTING STOPPED. FAILED TEST SPECIMEN REPLACED BY 8/N 404-2280. REF. 8/R 27-3726. FPR NR F-5136-S WT AND FPR NO. FR 654-2-350.							
PNEUMATIC-A/B CONTROL PRESS	TP-2-0162-1 CONTROL BOTTLE STAGING DISCONNECT, 27-00122-3 SUSTAINER HALF	UTP-PET	640823	60/C	YES	MADLEY NO 10715-9	002332
FAILURE MODE-OUT OF SPECIFICATION. DURING POST LIFE PROOF CYCLE LEAKAGE PAST THE SLIDING SEAL BETWEEN THE TEST SPECIMEN HALVES WAS 61 SCIN-MAXIMUM ALLOWABLE IS 25 SCIN. AFTER DISASSEMBLY AND REASSEMBLY PLUS LEAK CHECK THE LEAKAGE WAS 18 SCIN. REF. 8/N 309-2236 T.M. NO.1,2, AND 3.							
CORRECTIVE ACTION-DISASSEMBLY INVESTIGATION CONDUCTED. AFTER REASSEMBLY THE LEAKAGE WAS REDUCED. PET LOT WAS ACCEPTED. REF. FPR NR F-5118-SWT, NR F-5122-SWT AND FPR NO. FR 654-2-332.							
PNEUMATIC-A/B CONTROL PRESS	LV-98-08-3203F BLEED CHECK VALVE	FAR	3330	FACTORY	NO	CIRCLE SEAL NO P9-649	001215
FAILURE MODE-FAIL DURING OPERATION. REVERSE FLOW OF HELIUM AT 1000 PSI. THIS VALVE IS DESIGNED FOR A MINIMUM REVERSE FLOW OF 4000 SCIN HELIUM AT 3000 PSIG.							
CORRECTIVE ACTION-UNIT DID NOT FAIL. THE INSPECTORS RESPONSIBLE FOR THIS MISTAKEN REJECTION ARE NOW AWARE OF VALVE FUNCTION. PER MCR 8796-64 RECEIVED ON DATE 641007. THE VENDOR HAS IMPROVED CONTROL OF THE DRYING PROCESS FOLLOWING THE CLEANING OF THE VALVES.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B CONTROL PRESS	SLV-88-08-3192 F TUBE ASSEMBLY COUPLING NUT	PAR 27-80028-107	7103 840803	FACTORY	YES NO	60/C 60/C
FAILURE MODE-STRUCTURAL. THE AN 818-8C COUPLING NUT WAS CRACKED LONGITUDINALLY THE FULL LENGTH ON ONE HEX FLAT. ATT RIBUTED TO INCLUSION STRINGERS NORMALLY INHERENT IN 303 STAINLESS STEEL. TORQUE VALUES ALSO CONTRIBUTED TO THE FAILURE RE.						
CORRECTIVE ACTION-ACTION WAS TAKEN PRIOR TO FAILURE DATE. 303 8-3 WAS DELETED AS AN ACCEPTABLE ALLOW FOR CONNECTORS ON MIL-F-5009. IN HOUSE STOCK OR 303 NUTS WERE TO BE USED UNTIL DEPLETION OR UNTIL NEW PROCUREMENT WAS AVAILABLE. D ATE 630311, AFBSD TWR 830KA 28-12-131 DISCONTINUANCE OF 303 STAINLESS STEEL WITHOUT IMPACT.						
PNEUMATIC-A/B CONTROL PRESS	FR-69M-1968-1 CONTROL BOTTLE STAGING DISCONNECT, 27-08122-1 BOOSTER HALF	UTP-SLT 27-08122-1	840501	OTHER	YES NO	HADLEY 10715-11
FAILURE MODE-OUT OF SPECIFICATION. DURING SLT HIGH TEMPERATURE VIBRATION IN Z-AXIS, EXCESSIVE LEAKAGE RANGING FROM 300 TO 5200 SC/M WAS EXPERIENCED WITH COUPLINGS ENGAGED AND DISENGAGED. ALLOWABLE LEAKAGE IS 25 SC/M. REF. S/N 302-1 886 AND 302-2191 T.M. NO. 2843-37.						
CORRECTIVE ACTION-DISCONTINUE TESTING AND RETURN TEST SPECIMEN TO TEST REQUESTOR. REF. RTFM NR F-4259-ST AND FAR NO . FR-634-2-276.						
PNEUMATIC-A/B CONTROL PRESS	FR-69M-1968-1 CONTROL BOTTLE STAGING DISCONNECT, 27-08122-3 SUSTAINER HALF	UTP-SLT 27-08122-3	840501		YES NO	HADLEY 10715-9
FAILURE MODE-OUT OF SPECIFICATION. DURING SLT HIGH TEMPERATURE VIBRATION IN Z-AXIS, EXCESSIVE LEAKAGE RANGING FROM 300 TO 5200 SC/M WAS EXPERIENCED WITH COUPLINGS ENGAGED AND DISENGAGED. ALLOWABLE LEAKAGE IS 25 SC/M. REF. S/N 302-1 886 AND 302-2191 T.M. NO. 2843-37.						
CORRECTIVE ACTION-DISCONTINUE TESTING AND RETURN TEST SPECIMEN TO TEST REQUESTOR. REF. RTFM NR F-4259-ST AND FAR NO . FR-634-2-276.						
PNEUMATIC-A/B CONTROL PRESS	60A/8K/64-110/L3-401-00-298	FLIGHT	2980 940311	PALCE-2 289-6	YES NO	
FAILURE MODE-EXTERNAL-LEAK. CONTROLS BOTTLE PRESSURE BEGAN A DECAY OF 320 PSI PER MINUTE IMMEDIATELY AFTER RETROFLOC KET FIRE. THIS INDICATED A LEAK. THE TIME THE LEAK STARTED CANNOT BE DETERMINED. LOCATION OF LEAK COULD NOT BE DETER MINED.						
SYSTEM EFFECT-NONE.						

GENERAL DYNAMICS
CONVAIR DIVISION

18 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SIZE TIME DIP	PRJ OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE.							891296
CORRECTIVE ACTION-NONE							
CORRECTIVE ACTION-NONE							
PNEUMATIC-A/B CONTROL PRESS	FTAB384/P2-4CD-01-B9D	COMPOSITE-B FAC1	2500 640210	12	NO	NO	897903
FAILURE MODE-OUT OF TOLERANCE. DUE TO LOW HELIUM SUPPLY PRESSURE, THE BOOSTER CONTROL PNEUMATIC REGULATOR PRESSURE EXHIBITED PRESSURE SPIRES AT SIMULATED ENGINE START AND DECO.							
SYSTEM EFFECT-OPERATION TOO HIGH MOMENTARILY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B CONTROL PRESS	LV-90-08-3159F TUBE ASSEMBLY-SEPARATION HELIUM BU 27-45400-27 MPL	FAR	3500 831024	WTR	YES	NO	898435
FAILURE MODE-STRUCTURAL. FLARED ENDS OF TWO TUBES WERE CRACKED. EXACT CAUSE NOT DETERMINED. A SMALL PERCENT OF ALL FLARES MADE HAVE CRACKS. SOME APPARENTLY ARE NOT DETECTED BEFORE INSTALLATION. A CHIP WAS FOUND INSIDE THE ONE TUBE THAT WAS CUT AND FLARED AT THE SITE.							
CORRECTIVE ACTION-THE SAWVAN 11-180 OF NOV 29, 1965 INFORMED VAFB PERSONNEL OF THIS ANALYSIS. MFS 24-19 REVISION C, REQUIRED TIGHTER INSPECTION DURING FLARING.							
PNEUMATIC-A/B CONTROL PRESS	LV-90-08-3159F STAGING HELIUM BOTTLE, R-SEAL	FAR 27-089751	2240 831004	2-3	YES	WALTER KIDOE NO 89-1314-02	898181
FAILURE MODE-EXTERNAL LEAKAGE. LEAK AT LINE TO SUPPORT BOTTLE CONNECTION. CAUSE IS ATTRIBUTED TO AN EXCESSIVE QUANTITY OF LUBRICANT. CONDITION OF MATING SURFACE UNKNOWN. SEAL WAS REPLACED.							
CORRECTIVE ACTION-NOT CONFIRMED. DESIGN WILL NOT REMOVE REQUIREMENT FOR R-SEAL LUBRICANT MEMO 862-7-284 E.C. REVIEW OF INSTALLATION REQUIREMENTS FOR CORRECT INSTRUCTION IN APPLICATION OF LUBRICANTS. REF. PAR LV-90-08-3659.							
PNEUMATIC-A/B CONTROL PRESS	50A63-06413-401-00-212 BLEED VALVE, SCREW	FLIGHT	2120 830908	2-3 139	YES	NO	
FAILURE MODE-LEAK EXTERNAL. AT DECO PLUS 9.8 SECONDS THE CONTROLS BOTTLE PRESSURE WENT BELOW THE 133 REGULATOR DISC MARGE PRESSURE, RESULTING IN A DECAY OF ENGINE TANK PRESSURES THROUGH THE REST OF VERNIER PHASE. CAUSED BY PNEUMATIC LEAK AT V1 LOX BLEED VALVE WHICH NEARLY DEPLETED HELIUM SUPPLY.							

GENERAL DYNAMICS
COMVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO	
	SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. LOSS OF CONTROL PRESSURE RESULTED FROM HIGH HELIUM USAGE AFTER STAGING. HELIUM DEPLETION CAUSED BY HELIUM LEAK AT VALVE BLEED VALVE. HOWEVER VERNIER TANK PRESSURES WERE HIGH ENOUGH TO COMPLETE THE VERNIER'S SOLO PHASE.						000070
	VEHICLE EFFECT-NONE. THE ATLAS PLACED THE AGEMA AND PAYLOAD AT THE PROPER SPACE POSITION FOR CONTINUATION OF THE MISSION BY THE SECOND STAGE.						
	CORRECTIVE ACTION-NONE IN THE PNEUMATIC SYSTEM. THE TORQUE SPECIFICATION OF THE B NUT TO BLEED VALVE CONTROL LINE WAS INCREASED FROM 40-85 INCH-POUND TO 70-120 INCH POUNDS.						
PNEUMATIC-A/B CONTROL PRESS	SP-A9-08-3145F TUBING FITTING	FAR 27-45400-43	2160 650002	FACTORY	YES NO		007719
FAILURE MODE-STRUCTURAL CRACKED SLEEVE DUE TO STRESS CORROSION.							
CORRECTIVE ACTION-CONFIRMED APPROPRIATE PERSONNEL WERE INFORMED OF THIS ANALYSIS. ALL AM-810-Z SLEEVES WERE PURGED FROM STOCK. NECESSITATING USE OF THE NO-20619 ALTERNATE. ECM 817978 WAS ISSUED TO ASSURE ORDERING AND INSTALLING CORRECT SLEEVES. REF RAR SP-A9-08-3648. PER RAR-A9-08-3648 DESIGN REQUESTED THAT THE AM-810 SLEEVE BE DELETED FROM 27-45400.							000075
PNEUMATIC-A/B CONTROL PRESS	27A4314 STAGING HELIUM BOTTLE	UTP-PET 27-08379-1	030731		YES NO	WALTER RIDGE NO 99-1354-02	
FAILURE MODE-OUT OF TOLERANCE. BOTTLE FAILED TO MEET MINIMUM VOLUME REQUIREMENTS OF 807 CUBIC INCHES. MEASURED VOLUME WAS 634 CUBIC INCHES.							
CORRECTIVE ACTION-DESIGN CONSIDERED THE 13 CUBIC INCH LOSS AS NOT SIGNIFICANT FOR THIS TEST. QUALITY CONTROL WAS NOTIFIED.							
PNEUMATIC-A/B CONTROL PRESS	SP-90-08-3127F TUBE ASSEMBLY -30000 PSI HELIUM, 8 27-60089-119 -NUT	FAR 27-60089-119	1190 630502	1-2/PALC	YES NO		003237
FAILURE MODE-EXTERNAL LEAKAGE. D-NUT LEAKAGE DURING A LEAK CHECK. POSSIBLE STRESS RELAXATION. NUT WAS RETORQUED AND LEAK STOPPED. A VAPB THE DATED 810310 CONFIRMED THAT TUBE ASSEMBLY WOULD NOT BE FORWARDED FOR ANALYSIS.							
CORRECTIVE ACTION-G/C IS CONDUCTING TESTS ON STRESS RELAXATION OF D-NUTS. APPROPRIATE PERSONNEL WERE INFORMED OF THE FAILURE AND REQUESTED TO PAY PARTICULAR ATTENTION TO TORQUING OF D-NUTS, PER RAR-SP-90-01-3648.							

GENERAL CHEMICAL
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNUTNATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B CONTROL PRESS	A083-0089/DA022/L2-4MO-02-119	COMPOSITE-FRD/DPL	1190 930423	1-2	NO	
FAILURE MODE-NONE. HELIUM LOADING TIME EXCESSIVE. PROBLEM APPEARED TO BE AGE.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAYED.						
CORRECTIVE ACTION-CONTROL LOOP READJUSTED.						
PNEUMATIC-A/B CONTROL PRESS	A-99-08-3080F CONTROL BOTTLE STAGING DISCONNECT, 27-08122-3 SUSTAINER HALF	FAR 27-08122-3	70E 921227	FACTORY	YES B.M. MADLEY YES 10713-9, -7	
FAILURE MODE-LEAK-EXTERNAL. LEAKAGE IN EXCESS OF ALLOWABLE LIMIT FROM THREE DISCONNECTS. FAILURE IS ATTRIBUTED TO 1 INAPPROPRIATE TESTING METHOD. ONLY THE SUSTAINER HALF WAS RECEIVED FOR ANALYSIS.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. LEAKAGE TEST PROCEDURE EOP 415.122 REVISION A, DATED 1-20-83, CHANGED NAME ALLOWABLE LEAKAGE RATE TO 25 SCIN. THE RATE SPECIFIED BY 27-08122.						
PNEUMATIC-A/B CONTROL PRESS	9P-9D-08-3097-C SEPARATION TUBE, B-NUT	FAR 27-45400-19	1490 921220	WTR	YES 60/C NO	
FAILURE MODE-EXTERNAL LEAK DUE TO 1 CRACKED B-NUT.						
CORRECTIVE ACTION-NONE. FAILURE ANALYSIS CANCELLED BECAUSE TUBE ASSY. NOT RECEIVED FOR ANALYSIS.						
PNEUMATIC-A/B CONTROL PRESS	9P-9D-08-3092-F B-NUT-SEPARATION TUBE ASSY	FAR 27-45400-59	1420 921220	WTR	YES 60/C NO	
FAILURE MODE-STRUCTURAL. B-NUT WAS FOUND CRACKED. FAILURE WAS CONFIRMED AND CAUSE WAS ATTRIBUTED TO STRESS-CORROSION CRACKING.						
CORRECTIVE ACTION-NIL-F-9309A, AMENDMENT 7 WAS RELEASED. WILL ELIMINATE THE USE OF ALUMINUM ALLOYS PRONE TO STRESS-CORROSION CRACKING. 60/C TO PLURGE STOCK.						

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GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B CONTROL PRESS	SP-99-08-3068F TUBE-B-NUT	FAR 27-00025-123	1160 021208	FACTORY	NO	60/C NO
FAILURE MODE-STRUCTURAL. B-NUT FOUND CRACKED DURING DYE PENETRANT CHECK. ANALYSIS REVEALED NO CRACK. A HEAVY MILL M APR HAD APPARENTLY BEEN MISTAKEN FOR A CRACK. THIS IS NOT A FAILURE.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO ACTION TAKEN. CORRECTIVE ACTION HAS PREVIOUSLY BEEN TAKEN TO ELIMINATE THE PROBLEM OF CRACKED B-NUTS.						
PNEUMATIC-A/B CONTROL PRESS	A-99-08-3036F CONTROL BOTTLE STAGING DISCONNECT, 27-08122-1 BOOSTER HALF	FAR 27-08122-1	134F 021113	FACTORY	YES B.M. MADLEY NO 10715-11	095004
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE PAST MATED BOOSTER HALF DISCONNECT DUE TO CURVATURE ALONG THE CENTER LINE. COULD HAVE BEEN BENT DUE TO MISALIGNMENT WHEN THE TWO HALVES WERE MATED.						
CORRECTIVE ACTION-CONFIRMED. PER FAR A-99-08-3017 OF DEC 17, 1962. FINAL ASSEMBLY AND INSPECTION WERE INFORMED OF THE REJECTION AND WERE REQUESTED TO INSURE THAT MORE CARE IS TAKEN AT ASSEMBLY OF THE TWO SECTIONS. ON 24 JAN 1963 THE SITE B.C. CHIEFS HAD COPIES OF THE FAR AND HAD REVIEWED PRINTS, PLANNING, TOOLING, AND MATING PROCEDURE FOR ANY POSSIBLE ERROR WHICH COULD HAVE CAUSED THIS FAILURE.						
PNEUMATIC-A/B CONTROL PRESS	A-99-08-3037F CONTROL BOTTLE STAGING DISCONNECT, 27-08122-1 BOOSTER HALF	FAR 27-08122-1	134F 021113	FACTORY	YES B.M. MADLEY NO 10715-9	095003
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE PAST THE MATED DISCONNECT WAS CAUSED BY THE CURVATURE ALONG THE CENTER LINE OF THE MATING 27-08122-1 DISCONNECT. THE 27-08122-3 DISCONNECT DID NOT FAIL.						
CORRECTIVE ACTION-UNKNOWN. SEE FAR A-99-08-3017 FOR ACTION ON THE 27-08122-1 DISCONNECT.						
PNEUMATIC-A/D CONTROL PRESS	A-99-08-3040F STAGING HELIUM BOTTLE	FAR 27-08575	020809	FACTORY	NO WALTER KIDOE NO 091314-02	
FAILURE MODE-STRUCTURAL. SUSPECTED GRADUAL DEGRADATION OF SPHERE PHYSICAL PROPERTIES CAUSED BY USE OF A SOLVENT FOR CLEAN UP IN A TEST FOR HYDROCARBON CLEANLINESS. PER SPECIFICATION 0-73033. EXTENSIVE TESTING INDICATED THAT USE OF FREON ON IT DOES NOT DAMAGE PNEUMATIC SPHERES. THERE IS NO NEED FOR THE HYDROCARBON CHECK. THIS CAN CAUSE REJECTION OF SATISFACTORY SPHERES.						
CORRECTIVE ACTION-AS OF APRIL 3, 1963, THE 27-08575 KIDOE SPHERE WILL NOT BE CLEANED AND INSPECTED AT NO/A. THE USE OF FREON IT WAS DISCONTINUED. VAF 00808 APPROVED APRIL 3, 1963. ALLOWED USE OF PROCEDURE M-00-8008, REVISION 1.						

GENERAL B. J. MICS
CONVAIR DIVISION

15 JUN 1968

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
							093399
AT THE VENDOR. IN HOUSE SPHERES WILL BE REPROCESSED AT VENDOR. SPHERES WILL BE TESTED AT THE SUPPLIERS AND CLEANED AT THE MISSILE COMPONENT CLEANING LABORATORY. GO/A Q.P. (I. WILL WITNESS TESTING AND CLEANING AND ACCEPT SATISFACTORY SPHERES.							
PNEUMATIC-A/B CONTROL PRESS	A-9H-08-3034F STAGING DISCONNECT	FAR 27-0812E-3	33F 620522	6	NO	SCHELLIN YES MADLEY NO 10719-9	093398
FAILURE MODE-EXTERNAL LEAKAGE. AUDIBLE LEAKAGE. CAUSE NOT KNOWN. PART DAMAGED DURING UNAUTHORIZED REMOVAL THUS PREVENTING FUNCTIONAL TESTING. POSSIBLE CONFUSION AS TO ALLOWABLE LEAKAGE BETWEEN PROCEDURE 27-47723-1 AND SPECIFICATION 27-08122.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. GO/A MEMO P375-2/84 OF NOV. 13, 1962 CLARIFIED LEAKAGE LIMITS BY STATING THAT EXACT VOLUME MEASUREMENT IS NOT PRACTICAL AND THAT AUDIBILITY IS TO BE USED.							
PNEUMATIC-A/B CONTROL PRESS	AD461-0048/DA898/08-4MO-01-13	COMPOSITE-FRD/DPL	13F 820407	6	NO		090602
FAILURE MODE-LEAK EXTERNAL-GISE RELIEF VALVE IS IN THE BOTTLE PRESSURIZATION SYSTEM HAS LEAKING AND RESULTED IN LOW CONTROLS BOTTLE PRESSURE.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY IN SUBSTAINER CONTROL HELIUM BOTTLE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B CONTROL PRESS	A-9L-08-3003F CONTROL BOTTLE STAGING DISCONNECT. 27-0812E-3 SUBSTAINER HALF	FAR 27-0812E-3	620513	LINCOLN	YES B.M. MADLEY NO 10719-9		090417
FAILURE MODE-LEAK EXTERNAL. COUPLING LEAKED AT PACKING SLAVE BUT WHEN MALE PROBE WAS INSERTED. CAUSE NOT DETERMINED. LEAK WAS WITHIN ALLOWABLE LIMITS. NOTING PROBE NOT AVAILABLE FOR ANALYSIS.							
CORRECTIVE ACTION-FAILURE CONFIRMED. TURN OF NOVEMBER 29, 1962, TO ALL UNSOLD BASES REQUIRED REJECTION OF MATED DISCONNECTS ON THE BASIS OF AN AUDIBLE LEAK. MEMO P376-2/84 OF NOVEMBER 13, 1962 SPECIFIED THAT PROCEDURE 27-41008 B41 BE USED FOR THIS INSPECTION.							
PNEUMATIC-A/B CONTROL PRESS	AEBE-0076/01-504-00-88 PNEUMATIC SUPPLY LINE TO P.U. BY 87 CM.	FLIGHT P.U. BY 87	94C 620826	WTR 130	YES NO		
FAILURE MODE-LEAK. EXTERNAL. PROPELLANT UTILIZATION SYSTEM DATA IN CONNECTION WITH PROPELLATION AND PNEUMATIC DATA INDICATE A LEAK EXISTED IN THE PNEUMATIC LINE TO THE P.U. SYSTEM. CAUSE OF THE LEAK IS ATTRIBUTED TO THE THRUST SECTION PERS.							

15 JUN 1960

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT / NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VEHICLE PART NO	
	SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. VEHICLE EFFECT-LOSS OF VEHICLE STABILITY. LOSS OF PNEUMATICS RESULTED IN VERNIER ENGINE SHUTDOWN AND FAILURE TO JET THROUGH THE BOOSTER SECTION. CORRECTIVE ACTION-NONE.						097600
PNEUMATIC-A/B CONTROL PRESS	AA61-0138/60AP2-402-00-117 BOOSTER CONTROLS PNEUMATIC REGULATOR OR	COUNTDOWN	117D 611022	12 -2600	YES NO		094284
	FAILURE MODE-ERRATIC OPERATION OF BOOSTER CONTROLS PNEU. REG. 3 TO 10 PSI OSCILLATIONS ON LANDLINE MEASUREMENT. SYSTEM EFFECT-ERRATIC OPERATION. OSCILLATIONS WERE PRESENT IN LANDLINE MEASUREMENTS. VEHICLE EFFECT-COUNTDOWN DELAYED. CORRECTIVE ACTION-UNKNOWN.						093749
PNEUMATIC-A/B CONTROL PRESS	AA61-0094/P1-501-00-21 REGULATOR, VERNIER CONTROL	COUNTDOWN	2:7 610728	11	YES NO		093749
	FAILURE MODE-ERRATIC OPERATION-THE VERNIER CONTROL REGULATOR OUTPUT EXHIBITED A 6 PSI 1 CPS OSCILLATION STARTING AT T-40 MINUTES. SYSTEM EFFECT-NONE. VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. THE TEST WAS TERMINATED AS IT WAS IMPOSSIBLE TO ISOLATE THE OSCIL LATION TO EITHER THE REGULATOR OR AN INSTRUMENTATION MALFUNCTION. CORRECTIVE ACTION-UNKNOWN.						093729
PNEUMATIC-A/B CONTROL PRESS	98-08-208 ENGINE CONTROL BOTTLE STAGING DISC 27-00122-3 CORRECT SEAL	FAR	910418	ETR	YES B.M. MADLEY NO 10713		093729
	FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE WHICH WAS CAUSED BY SMALL PARTICLES BETWEEN THE CHEV RON SEAL AND THE RETAINER. ROTATING THE SEAL SEVERAL TIMES CURED THE LEAK. CORRECTIVE ACTION-FIELD PERSONNEL WERE INSTRUCTED TO MAKE ATTEMPTS TO CORRECT LEAKAGE, AS ABOVE, BEFORE REJECTING T HE ITEM.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B CONTROL PRESS	AE80-0951/P2-409-00-90 CONTROL AND SEPARATION BOTTLES	FLIGHT	900 810123	12 0	NO YES	097296
FAILURE MODE-EXTERNAL-LEAK. CONTROL AND SEPARATION BOTTLES PRESSURE DECAY RATES WERE ABNORMALLY HIGH DURING BOOSTER PHASE. CAUSE WAS DETERMINED TO BE HELIUM LEAKAGE IN THE BOOSTER SECTION SEPARATION SYSTEM.						
SYSTEM EFFECT-NONE. ALTHOUGH CONTROL AND SEPARATION BOTTLES PRESSURE DECAYS WERE ABNORMALLY HIGH DURING BOOSTER PHASE, THERE WAS ADEQUATE PRESSURE AT BECO TO EFFECT A SATISFACTORY BOOSTER JETTISON, AND TO PROVIDE PROPER CONTROLS BY STEM PRESSURE FOR THE REMAINDER OF FLIGHT.						
VEHICLE EFFECT-NONE. SEPARATION AND CONTROLS FUNCTIONS WERE SATISFACTORILY ACCOMPLISHED THROUGHOUT FLIGHT.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B CONTROL PRESS	96-08-199 HELIUM FLEX HOSE	FAR 27-06216-1.-3	620 810110	ONFB	YES FLEX METAL HOSE NO E	097276
FAILURE MODE-STRUCTURAL. ONE -1 UNIT REJECTED FOR FAILURE WHILE PRESSURIZED TO 3000 PSIG. THREE ADDITIONAL UNITS REJECTED WHEN THEY FAILED INSPECTION TESTS (-1 AND TWO PIECES OF -3). ALL UNITS DISPLAYED POOR SILVER SOLDERING OF THE STAINLESS TUBE TO THE BELLONS, INCLUDING PARTIAL SURFACE WETTING BY SOLDER, POROSITY AND VOIDS.						
CORRECTIVE ACTION-SAMPLING PLAN OF SECTIONING ONE OUT OF FIVE HOSES FABRICATED BY THE VENDOR WAS INITIATED. 60/C BY OCK DYE CHECKED. VENDORS FABRICATION PROCESSES REVISED.						
PNEUMATIC-A/B CONTROL PRESS	AE60-0748/P2-401-00-80 SEPARATION AND CONTROLS BOTTLE	FLIGHT	900 800925	12	YES NO	098096
FAILURE MODE-EXTERNAL-LEAK. ABNORMAL PRESSURE DECAY IN BOTH THE SEPARATION AND THE CONTROLS HELIUM BOTTLES DURING BOOSTER PHASE. A NORMAL PRESSURE DECAY IN THE CONTROL HELIUM BOTTLE DURING SUSTAINER PHASE INDICATES THE LEAK WAS IN THE BOOSTER SECTION.						
SYSTEM EFFECT-NONE. PRESSURE WAS ADEQUATE FOR SEPARATION AND SUBSEQUENT SYSTEM OPERATION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B CONTROL PRESS	AE80-075489-401-00-47	FLIGHT	470 600912	3768-3 105	YES NO	
FAILURE MODE-EXTERNAL-LEAK. ABNORMAL DECAY IN CONTROLS BOTTLE HELIUM PRESSURE AT VERNIER TANKS REPRESENTATION ATTRIBUTED TO HELIUM LEAK IN THE VERNIER TANK PRESSURIZATION SYSTEM.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. PRESSURE DECAY CAUSED THE SUSTAINER GAS GENERATOR TO GRADUALLY CLOSE, CAUSING						

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GENERAL AMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE	SIZE	PRI.	VENDOR NAME
SUB-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE	DIP	TIME	PART NO
6 A DECREASE IN SUSTAINER THRUST STARTING AT 220 SECONDS.						
VEHICLE EFFECT-PREMATURE SUSTAINER ENGINE SHUTDOWN AT 280 SECONDS PROBABLY DUE TO DEGRADATION OF THE COMBUSTION PROCESS IN THE SUSTAINER CHAMBER.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B	AERO-0538/P1-402-00-80	FLIGHT	600	11	NO	
CONTROL PRESS	HELIUM STORAGE TANK		600702	120	NO	
FAILURE MODE-OUT OF EXPECTED TEST VALUE. ERRONEOUS PRESSURIZATION AND VENTING OF VERNIER PROPELLANT TANKS CAUSED EXCESSIVE USAGE OF CONTROLS HELIUM SUPPLY. CYCLING OF TANKS RESULTED FROM INTERMITTENT SHORT IN ENGINE RELAY BOX OR MALFUNCTION.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. CONTROLS HELIUM SUPPLY DEPLETED TO LESS THAN MINIMUM REGULATOR OPERATING PRESSURE THROUGH EXCESSIVE ERRONEOUS USAGE. LACK OF SUFFICIENT PRESSURE TO THE SUSTAINER LOW REGULATOR AFFECTED ENGINE PERFORMANCE.						
VEHICLE EFFECT-IMPROPER TRAJECTORY. DECREASE IN SUSTAINER ENGINE THRUST FROM LACK OF CONTROL. PRESSURE TO LOW REGULATOR RESULTED IN LOW CUTOFF VELOCITY AND SHORT RANGE.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B	A2C-27-118/P1-403-00-42	FLIGHT	420	11	NO	
CONTROL PRESS			600308	205.25	NO	
FAILURE MODE-LEAK. A LEAK IN THE VERNIER ENGINE SYSTEM OR THE ENGINE TANK SYSTEM BECAME EVIDENT AT TANK REPRESSURIZATION.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. CONTROLS HELIUM BOTTLE PRESSURE BEGAN TO DECAY AT THE RATE OF 5.05 PSI/SEC AT 205.25 SECONDS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B	9A-00-131	FAR	130	EDWARDS	YES	STEWART WARNER
CONTROL PRESS	LOW BOILOFF VALVE CONTROLLER	27-08112-15	591100			
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FIVE CONTROLLERS (27-08112-15) REJECTED DUE TO FAILURE TO OPEN AND/OR CLOSE THE BOILOFF VALVE DURING LOW TANKING. CONCLUDED THAT FAILURE RESULTED FROM HIGH LIMIT SWITCH FAILING TO ACTIVATE DUE TO TEMPERATURE HUMIDITY EFFECTS OR INEFFICIENT LINKAGE.						
CORRECTIVE ACTION-A RETROFIT ON MBL 130 WITH A DOUBLE, III SERIES, BOILOFF VALVE EFFECTIVELY THRU 320. A NEW POPPET TYPE PNEUMATICALLY OPERATED VALVE TUBE INSTALLED ON MBL 240 AND 270. VENDOR REDESIGNING PRESSURE CONTROLLER FOR BETT						

GENERAL DYNAMICS
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	BITE DIF TIME	PRI DIF	OTH DIF	VENDOR NAME VENDOR PART NO
ER OPERATING CHARACTERISTICS. THIS UNIT NOT USED ON MISSILES 370 AND ON.							
PNEUMATIC-A/B CONTROL PRESS	AZC-27-082/P1-401-00-26	FLIGHT	260 591029	11 281	NO	NO	098487 098577
FAILURE MODE-OUT OF TOLERANCE. DURING VERNIER BOLD, CONTROLS BOTTLE PRESSURE DECREASED AT A RATE SUBSTANTIALLY GREATER THAN NORMAL. V2 ENGINE WAS NOT IGNITED DURING THIS TIME. ATTRIBUTED TO A HIGH RATE OF PROPELLANT USAGE FROM THE 81 ART TANKS DUE TO A LEAK IN THE PROPELLANT LINES AND/OR LACK OF COMBUSTION BACK PRESSURE FROM V2 ENGINE.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B CONTROL PRESS	AZC-27-055/P4-402-00-15	COUNTDOWN	130 591015	14	NO	NO	092477
FAILURE MODE-CONTAMINATION. PNEUMATIC CONTROL SYSTEM CONTAMINATED WITH FUEL. NO ADDITIONAL DATA.							
SYSTEM EFFECT-CONTAMINATION.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RE-SCHEDULED. COUNTDOWN ABORTED AS RESULT OF FUEL CONTAMINATED PNEUMATIC CONTROL SYSTEM AND BECAUSE OF ERRATIC ERROR DEMODULATOR OUTPUT SIGNAL.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B CONTROL PRESS	AZC-27-055/P4-401-00-15 TUBING	COUNTDOWN	130 591013	14 -4800	YES	YES	092874
FAILURE MODE-LEAK-EXTERNAL. HELIUM LEAK IN CONTROL SYSTEM. NO ADDITIONAL DATA.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. HELIUM USAGE RATE INCREASED ABOVE NORMAL AS RESULT OF LEAK.							
VEHICLE EFFECT-COUNTDOWN DELAYED. HOLD CALLED TO REPAIR LEAK. TOTAL HOLD TIME 20 MINUTES.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B CONTROL PRESS	AZM-27-398/FC-400-01-18	COMPOSITE-FACTORY	180 890921	180	NO	YES	
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. PNEUMATICS WAS TURNED OFF PREMATURELY DURING THE TEST AT 120 SEC ONCE INHIBITING FURTHER EVALUATION OF THE PU AND NB VALVES.							
SYSTEM EFFECT-OPERATION TOO SHORT. SYSTEM CONTROL PRESSURE WAS NOT AVAILABLE AFTER 120 SECONDS.							

GENERAL D. NICS
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	8:12 TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-COMPONENT RESCHEDULED, OR RESCHEDULED.							007410
CORRECTIVE ACTION-NOT KNOWN-POST COMPOSITE TESTING REQUIRED.							
PNEUMATIC-A/B CONTROL PRESS	FTAB142/P3-403-00-17 CONTROLLER, VALVE	COUNTDOWN	170 390916	13 -2250	NO YES		007473
FAILURE MODE-OUT OF TOLERANCE. HELIUM BOTTLE PRESSURE WAS TOO LOW DUE TO CONTROLLER VALVE SETTING ON GROUND HEAT EXCHANGER.							
SYSTEM EFFECT-OPERATION TOO LOW HELIUM BOTTLE PRESSURES STABILIZED AT 2,050 PSI. REDLINE WAS 2,050 PSI.							
VEHICLE EFFECT-COUNTDOWN DELAYED 9 MINUTES.							
CORRECTIVE ACTION-SETTING FOR VALVE 11 CONTROLLER ON THE GROUND HEAT EXCHANGER WAS READJUSTED.							
PNEUMATIC-A/B CONTROL PRESS	FTAB142/P3-403-00-11 VALVE, RELIEF	PRF	110 390714	11/ETR -2040	NO NO		007487
FAILURE MODE-FAIL DURING OPERATION. THE BOOSTER CONTROL MANIFOLD PRESSURE RELIEF VALVE FROZE IN THE OPEN POSITION DURING PNEUMATIC BOTTLE PRESSURIZATION. THIS WAS CAUSED BY IMPROPER POSITIONING OF THRUST SECTION HEATER DUCTING.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. THE BOOSTER CONTROL MANIFOLD PRESSURE RELIEF VALVE FROZE OPEN.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 40 MINUTES HOLD.							
CORRECTIVE ACTION-REPOSITIONED THRUST SECTION HEATER DUCTING.							
PNEUMATIC-A/B CONTROL PRESS	FTAB142/P3-403-00-03 RELIEF VALVE, PNEUMATIC	COUNTDOWN	50 390604	13	YES NO		007440
FAILURE MODE-LEAK-EXTERNAL. VALVE FAILED TO SEAT PROPERLY.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY.							
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-REPLACE VALVE.							
PNEUMATIC-A/B CONTROL PRESS	A2C-27-031/P3-403-00-01 RELIEF VALVE	COUNTDOWN	50 390604	13	YES NO		
FAILURE MODE-LEAK-EXTERNAL. THE BOOSTER PNEUMATIC CONTROL MANIFOLD RELIEF VALVE WOULD NOT SEAT PROPERLY AFTER A 3 H OUR HOLD.							
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY FOLLOWING OPEN RELIEF VALVE.							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VEHICLE NAME VENDOR PART NO
VEHICLE EFFECT-COUNTDOWN, COMPOSITE ABORTED AND RE-SCHEDULED.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B CONTROL PRESS	AZC-27-051/P3-402-00-03 SOLENOID-ACTUATED CHECK VALVE	COUNTDOWN	30 390402	13	YES NO	081671
FAILURE MODE-LEAK-INTERNAL. FAILURE OF THE SUSTAINER TANKS HELIUM BOYLE SOLENOID-ACTUATED CHECK VALVE.						
VEHICLE EFFECT-COUNTDOWN, COMPOSITE ABORTED AND RE-SCHEDULED. ABORT WAS DUE TO CONTINUED GUIDANCE PROBLEMS.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B CONTROL PRESS	FTA4587/P1-201-00-11 REGULATOR, GAS-SUSTAINER ENGINE CO NITROL	PRF	118 390120	11	YES NO	090081
FAILURE MODE-ERRATIC OPERATION. SUSTAINER ENGINE CONTROL PNEUMATIC REGULATOR OUTPUT PRESSURE WAS ERRATIC WITH A MAXIMUM PRESSURE OF 838 PSIG JUST PRIOR TO ENGINE START AND A MINIMUM VALUE OF 800 PSIG AT ENGINE START.						
SYSTEM EFFECT-ERRATIC OPERATION. SUSTAINER ENGINE CONTROL MANIFOLD PRESSURES WERE ERRATIC.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-REPLACED REGULATOR.						
PNEUMATIC-A/B CONTROL PRESS	2C-7-210/P4-203-00-12 SUSTAINER CONTROL, PRESSURE REGULATOR	FLIGHT	128 391120	14 -3 TO 28	YES NO	090113
FAILURE MODE - OUT OF TOLERANCE. DURING BOOSTER PHASE THE SUSTAINER HELIUM CONTROL REGULATOR DRIFTED BELOW MINIMUM CONTROL MANIFOLD PRESSURE SETTING OF 735 PSIG. NO CAUSE FOR THIS DISCREPANCY HAS BEEN DETERMINED.						
SYSTEM EFFECT-OPERATION TOO LOW-SUSTAINER CONTROL MANIFOLD PRESSURE DECAYED BELOW MINIMUM ALLOWABLE, REACHING 724 PSIG AT BOOSTER CUT-OFF. THE PRESSURE RETURNED TO NORMAL (720 PSIG) BY SUSTAINER CUT-OFF AT 200 SECONDS.						
VEHICLE EFFECT-NONE-THE VEHICLE PERFORMED NORMALLY DURING THE TIME THE CONTROL PRESSURE REMAINED BELOW 735 PSIG.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B CONTROL PRESS	FTA4311/P1-201-00-0 SUSTAINER PNEUMATIC CONTROL REGULATOR	PRF	96 391014	11 0	YES NO	090113
FAILURE MODE-OUT OF TOLERANCE. THE SUSTAINER PNEUMATIC CONTROL REGULATOR OPERATED SLIGHTLY ABOVE THE UPPER LIMIT.						

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-OPERATION TOO HIGH. THE SUSTAINER PNEUMATIC CONTROL PRESSURE WAS SLIGHTLY ABOVE THE UPPER LIMIT.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B CONTROL PRESS	FTA4311/PI-201-00-9 BOOSTER PNEUMATIC CONTROL REGULATOR	FRF	98 591014	11 0	YES NO	
FAILURE MODE - OUT OF TOLERANCE. THE BOOSTER PNEUMATIC CONTROL REGULATOR EXHIBITED SEVERAL LEVEL SHIFTS FROM ENGINE START UNTIL ENGINE CUTOFF. DURING MOST OF THIS PERIOD, THE PRESSURES WERE OUT OF TOLERANCE.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B CONTROL PRESS	FTA4238/PA-202-00-8 SOLENOID CHECK VALVE, SUSTAINER TA MK	COUNTDOWN	98 540911	14 -2100	YES NO	
FAILURE MODE-FAIL DURING OPERATION. APPARENTLY STUCK OPEN.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-COUNTDOWN DELAYED. 28 MINUTES HOLD. 23 MINUTES RECYCLE LOSS.						
CORRECTIVE ACTION-VALVE REPLACED.						
PNEUMATIC-A/B CONTROL PRESS	FTA4188/PI-202-00-09 REGULATOR GAS	FRF	98 340820	11/ETH	YES NO	
FAILURE MODE-ERRATIC OPERATION. SUSTAINER CONTROL PNEUMATIC REGULATOR OUTLET PRESSURE RODE FROM 758 PSIG TO 841 PSI 6 THEN DECAYED TO 758 PSIG AT ENGINE CUTOFF.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-REPLACED REGULATOR.						
PNEUMATIC-A/B CONTROL PRESS	EM-1029/TEST 14-306 REGULATOR, RETAINER SEAL	CAPTIVE	980913	1-4	YES NO	
FAILURE MODE-FAILED DURING OPERATION. DUE TO INCORRECTLY INSTALLED RETAINER SEAL IN THE SUPPLY REGULATOR FOR PRESSURIZATION PROGRAMMER, THE REGULATOR OPENED AND FAILED TO CLOSE PRIOR TO TEST START. A SUDDEN BURST OF PRESSURE THEN C						

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-POLYMER-ATMOSPHERIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE	DATE TIME	PRI OIM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B LINE SUPPLY	989-1-009 FITTING	COMPOSITE-FRD/DPL	3030 060807	ABREAA-1	YES NO	
FAILURE MODE-EXTERNAL LEAK. AN LINE LEAK OCCURRED AT SHROUD FITTING.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. LOSS OF LINE.						
VEHICLE EFFECT-COUNTDOWN DELAYED. DELAY IN DPL.						
CORRECTIVE ACTION-TRO2142R SEALER WAS APPLIED.						
PNEUMATIC-A/B LINE SUPPLY	LV-98-02-080P SHIELD, GASKET	FAR 27-76404-7	2840 030416	12	YES KIRKELL NO R	89-240
FAILURE MODE-LEAK-EXTERNAL-GASKET WAS FOUND CUT-THRU WHERE THE 27-76404-7 SHIELD LIP BUTTS THE GASKET, FOLLOWING A LARGER LINE LEAK. CUT WAS DONE AT FACTORY ASSEMBLY. DESIGN CONFIGURATION OF THE SEALING SURFACES IS RESPONSIBLE FOR THIS LEAK AND THOSE ON 1600-19, -20, -21, -22, 1600-24 AND 71-13. OTHER CUT GASKETS WERE FOUND AND REPORTED EARLIER BY FAR SP-90-02-040, LV-98-02-048 AND LV-98-02-049. EARLIER CORRECTIVE ACTION OF REDUCING LINE TRANSFER PRESSURE WAS NOT ELIMINATED LINE LEAKAGE.						
CORRECTIVE ACTION-CONFIRMED. A DESIGN CHANGE WAS RECOMMENDED FOR THE LINE SEALING SURFACES TO PREVENT LEAKAGE. ACTION WAS INITIATED BY FAR LV-98-02-3633.						
PNEUMATIC-A/B LINE SUPPLY	LV-98-06-3230P HELIUM BOTTLE AND SHROUD ASSEMBLY	FAR 27-80031	1940 050205	ETR	YES NO	729 50/C
FAILURE MODE-EXTERNAL LEAKAGE. SHROUDS LEAKED LIQUID NITROGEN DURING COLD TEST. CAUSE WAS CRYOGENIC TEMPERATURE EFFECTS ON SHROUD AND SEAL, AND THE SEAL EFFECTS WHEN REMOVING OR LOOSENING MOUNTING STRUT NUT. THIS ALLOWS SHROUD ROTATION. PRESENT ASSEMBLY LEAK TESTS ARE CONSIDERED INADEQUATE FOR THE FUNCTION OF THE SHROUD ASSEMBLY.						
CORRECTIVE ACTION-CONFIRMED. FAR LV-98-06-3230 RECOMMENDED-A MECHANICAL STOP BE DESIGNED IN THE STRUT TO PREVENT SHROUD ROTATION DURING INSTALLATION. S.C. SHOULD INCORPORATE A CRYOGENIC LEAK CHECK OF ASSEMBLIES PRIOR TO DYE PENETRANT INSPECTION OF THE WELDS AND AFTER STRUT ATTACHMENT. INSTALLATION PROCEDURES AND DIFFICULTIES SHOULD BE REVIEWED TO ASSURE THAT ALL PICTURE, ALIGNMENT AND ASSEMBLY CALL OUT ARE ADEQUATE. DATA OBTAINED SHOULD BE MADE AVAILABLE FOR EVALUATION AND CORRECTION OF DEFICIENCIES.						
PNEUMATIC-A/B LINE SUPPLY	SLV-90-02-32237 SLEEVE, TUBE FITTING	FAR 7-01039-9	7106 041211	ETR	YES NO	
FAILURE MODE-EXTERNAL LEAKAGE. AN UNSPECIFIED CRUSH MARKER WAS INSTALLED AT THE TUBE FLARE. MATING SLEEVE WAS DISTORTED AND HAD RADIAL SCORE MARKS. GROSS OVER TIGHTENING OF BOTH FITTINGS CAUSED SLEEVE FAILURE. CRUSH MARKER PROBABLY A DUE TO STOP LEAKAGE. DISTORTED TUBING FLARE COULD HAVE RESULTED FROM MISALIGNMENT.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPCAT NUMBER FAILED COMPONENT NAME	CIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SIZE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
AUSED A RUPTURE OF LOW TANK PRESSURIZATION BELLOWS. THE LOW PROGRAMMER SUPPLY RELIEF VALVE RELIEVED THE PRESSURE AS DESIGNED BUT FAILED TO SEAT, THUS DRAINING THE SAME HELIUM PRESSURE SUPPLY.							093009
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B CONTROL PRESS	FTA4088/P3-201-00-04 CHANGE OVER VALVE	FRF	48 590718 0	18 0	YES NO		093300
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE BOOSTER PNEUMATICS CONTROL PRESSURIZATION CHANGEOVER VALVE DID NOT GO TO THE INTERNAL POSITION UPON COMMAND.							
SYSTEM EFFECT-OPERATION DOES NOT START. OPERATION OF THE BOOSTER CONTROLS PRESSURIZATION SYSTEM ON INTERNAL PRESSURES WAS NOT ACCOMPLISHED.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B CONTROL PRESS	FTA4017/P1-203-00-3 SUSTAINER CONTROL REGULATOR	PRF	38 590427	11 -0.6	YES NO		093342
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. SUSTAINER CONTROL PNEUMATIC REGULATOR OUTLET PRESSURE INCREASED BEYOND RECORDER RANGE AT -0.6 SECONDS.							
SYSTEM EFFECT-OPERATION TOO HIGH. SUSTAINER CONTROL PNEUMATIC REG OUTLET PRESSURE INDICATED NORMAL OPERATION UNTIL 1-0.6 SEC. THEN INCREASED BEYOND THE RANGE OF THE RECORDER. AT 7 PLUS 0.3 SEC IT BEGAN TO RETURN ERRATICALLY. TIME OF SWITCHOVER TO INTERNAL PNEUMATIC CONTROLS WAS SUSPECTED OF BEING CRITICAL.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
PNEUMATIC-A/B CONTROL PRESS	EW-1029/14-30J-300 REGULATOR	CAPTIVE	500808	1-4	YES NO		093000
FAILURE MODE-OUT OF TOLERANCE. SUSTAINER REGULATOR DISCHARGE PRESSURES WERE OUT OF TOLERANCE LIMITS BY 5 TO 90 PSIG. IT POSSIBLY MAY HAVE BEEN DUE TO LOW REGULATOR PRESSURE SETTINGS.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OIM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B CONTROL PRESS	PTA2536/PA-101-00-13 VALVE-CHANGEOVER	FRF	13A 900418	12/ETR -7500	YES NO	083324
FAILURE MODE-LEAK. WHEN HELIUM SUPPLY TRAILERS WERE SWITCHED, THE CONTROL BOTTLE PRESSURE GAGE REFLECTED THE PRESSURE CHANGE, INDICATING A LEAK IN THE MISSILE PNEUMATIC CHANGEOVER VALVE.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-COUNTDOWN DELAYED. 93 MINUTES HOLD.						
CORRECTIVE ACTION-CHANGED CHANGEOVER VALVE.						
PNEUMATIC-A/B CONTROL PRESS	PTA2788/PA-104-00-13 CHANGEOVER VALVE	COUNTDOWN	13A 900328	14 -640	YES NO	087473
FAILURE MODE - ERRATIC OPERATION. THE CONTROLS CHANGE OVER VALVE WAS NOT SEATING PROPERLY. INSPECTION REVEALED TWO SMALL BLACK PARTICLES ON THE REL-F SEAT WHICH COULD HAVE CAUSED MALFUNCTION AND A DAMAGED TEFLON - NYLAR LIPSICAL.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. CONTROLS BOTTLE PRESSURE COULD NOT BE MAINTAINED WHEN THE EXTERNAL GROUND PRESSURE SOURCE WAS REMOVED.						
VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. COUNTDOWN RECYCLED 24 MINUTES AND HELD FOR 29 MINUTES AND THEN ABORTED.						
CORRECTIVE ACTION-TESTING PERFORMED DURING HOLD VERIFY. CHANGE OVER VALVE NOT SEATING PROPERLY. CHANGEOVER VALVE SUBSEQUENTLY REPLACED.						
PNEUMATIC-A/B CONTROL PRESS	PTA2549/PA-101-00-13 VALVE-CHECK	FRF	13A 900131	14 0	YES NO	083333
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE SOLENOID CONTROLLED CHECK VALVE BETWEEN THE CONTROL BOTTLES AND TANK BOTTLES FAILED TO SEAT.						
SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. EXCESSIVE PRESSURE DECAY WAS NOTED IN THE CONTROLS BOTTLES.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-REPLACED VALVE AND CHECKED SYSTEM WITH SATISFACTORY RESULTS.						
PNEUMATIC-A/B CONTROL PRESS	EM-771/31-102-A2-09 INLET LINE TO VERNIER LOW TANK REGULATOR	CAPTIVE	9A 973139	31	YES GO/C NO	083333
FAILURE MODE-LEAK EXTERNAL. A HOLD WAS INITIATED TO CORRECT A LEAK IN THE INLET LINE TO THE VERNIER ENGINE LOW STAR TANK REGULATOR.						
SYSTEM EFFECT-OPERATION TOO LOW.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRJ O7H	VENDOR NAME VENDOR PART NO
VEHICLE EFFECT-COUNTDOWN DELAYED.						
PNEUMATIC-A/B CONTROL PRESS	EN-957/1A,108-04-02 VERNIER START TANK PRESSURE REGULA TOR	CAPTIVE	2A 970726	1A	YES NO	
FAILURE MODE-OUT OF TOLERANCE. VERNIER START TANK PRESSURE REGULATORS MALFUNCTIONED, LOCKING-UP PRESSURE AT APPROX 100 PSIG ABOVE THE DESIRED SETTING.						
SYSTEM EFFECT-OPERATION TOO HIGH.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-MANUAL BLEED WAS CLOSED. UPON REOPENING THE BLEED THE OVER-PRESSURIZATION DECAYED TO PROPER VALUE.						
- TEST RESULTS INDICATED THAT VERNIER ENGINE ORIFICE CALIBRATION WAS WITHIN FLOW TOLERANCE.						
PNEUMATIC-A/B CONTROL PRESS	EN-957/1A,108-04-02 ENGINE PNEUMATIC SUPPLY LINES	CAPTIVE	2A 970726	1A 1.5	YES NO	
FAILURE MODE-OUT OF TOLERANCE. ENGINE PNEUMATIC REGULATOR OUTLET PRESSURE DROPPED TO A MIN VALUE OF 600 PSIG APPROX 1-3 SEC AFTER 66 LHM BREAK SIGNAL, THEN ROSE TO 750 PSIG FOR APPROX 2 SEC, THEN STABILIZED OUT OF 747 PSIG.						
SYSTEM EFFECT-OPERATION TOO LOW.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-PRESSURE DECAY DUE TO INCREASED MED IUM REQUIREMENT FOR PRESSURIZATION OF VERNIER START TANKS. THE A WAS FIRST CLINATION FIRING OF BOTH BOOSTER AND VERNIER ENGINES WITH A LIGHT WALL MISSILE TANK. TEST RESULTS INDICATED THAT THE PNEUMATIC SUPPLY WAS INADEQUATE DUE TO EXCESSIVE LINE LOSS SUPPLY LINE DIAMETER SHOULD BE INCREASED A NO/OR UNNECESSARY ROUTING AND RESTRICTIONS ELIMINATED.						
PNEUMATIC-A/B LINE SUPPLY	LA-TNU-01-7116 DUCTING	COMPOSITE-PRO/DPL	7116 060308	PALCE-4	YES NO	
FAILURE MODE-DURING THE DPL A LEAK WAS NOTED IN THE LINE OVERBOARD DUCTING.						
SYSTEM EFFECT-LOW THERMAL ENVIRONMENT.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE LEAK WAS REPAIRED.						

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GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
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098132

CORRECTIVE ACTION-CONFIRMED. GO/C LETTER DATED 850222 STATES CAUSE COULD HAVE OCCURRED AT THE PRESSURE PIT, BUT PER SOMEONE THERE ARE FAMILIAR WITH REQUIREMENTS. ECM 312382 ON 27-82049, RELEASED JAN. 8, 1964 LIMITS USE OF COPPER SEAL S TO ONE-HALF INCH DIAMETER MINIMUM. ALL SUCH SEALS SMALLER IN SIZE WERE REMOVED FROM STOCK. SLV SITES MAY USE COPPER R GASKETS SMALLER THAN ONE-HALF INCH ONLY WITH DESIGN APPROVAL AND IF LEAKING JOINTS DO NOT SEAL WHEN RETORQUED.

098133

PNEUMATIC-A/B
LINE SUPPLY
SLV-9D-08-3225F
TUBE FITTING

FAR
89-11344-7
7108 ETR
841211
YES
NO

FAILURE MODE-EXTERNAL LEAKAGE. AN UNSPECIFIED CRUSH WASHER WAS INSTALLED AT THE TUBE FLARE. MATING SLEEVE WAS DISTORTED AND HAD RADIAL SCORE MARKS. GROOS OVER TORQUING OF BOTH FITTINGS CAUSED SLEEVE FAILURE. CRUSH WASHER PROBABLY ADDED TO STOP LEAKAGE. DISTORTED TUBING FLARE COULD HAVE RESULTED FROM MISALIGNMENT.

CORRECTIVE ACTION-CONFIRMED. GO/C LETTER DATED 850222 STATES CAUSE COULD HAVE OCCURRED AT THE PRESSURE PIT, BUT PER SOMEONE THERE ARE FAMILIAR WITH REQUIREMENTS. ECM 312382 ON 27-82049, RELEASED JAN. 8, 1964 LIMITS USE OF COPPER SEAL S TO ONE-HALF INCH DIAMETER MINIMUM. ALL SUCH SEALS SMALLER IN SIZE WERE REMOVED FROM STOCK. SLV SITES MAY USE COPPER R GASKETS SMALLER THAN ONE-HALF INCH ONLY WITH DESIGN APPROVAL AND IF LEAKING JOINTS DO NOT SEAL WHEN RETORQUED.

099732

PNEUMATIC-A/B
LINE SUPPLY
SLV-9D-08-3215F
PRESSURIZATION DUCT

FAR
27-80004-89
7103 GO/C
841018 ETR
YES
NO

FAILURE MODE-LEAK-EXTERNAL- THE LINE PRESSURIZATION DUCT WELD ASSEMBLY LEAKED AT THE WELD. THE REPLACING SPARE WELD ASSEMBLY WAS FOUND TO BE 3/16 INCH TOO LONG FOR INSTALLATION. THE TUBE ATTACHES TO A HELIUM BOTTLE WROUD FITTING WHICH VARIES IN LOCATION FOR TWO REASONS. 1. SHROUD VALVES ARE PLACED AROUND HELIUM BOTTLE AND WELDED. 2. THE HELIUM BOTTLE AND SHROUD SUPPORTS ARE INSTALLED WITHOUT ANY LOCATING DEVICE. THE TUBE ASSEMBLY IS RELATIVELY SHORT AND DIFFICULT TO INSTALL. DISTORTION AT INSTALLATION CAUSES THE 27-80004-89 WELD ASSEMBLY TO CRACK AT THE WELD.

CORRECTIVE ACTION-A PRODUCTION AID IS BEING MADE TO LOCATE HELIUM BOTTLE SUPPORT BRACKETS IN RELATION TO STATION 1208. DESIGN IS IN THE PROCESS OF REVISING TUBE ASSEMBLY TO ALLOW MORE FLEXIBILITY. THE PART WAS NOT RECEIVED FOR ANALYSIS, BUT WAS CUT OFF, REPLACED AND REINSTALLED.

PNEUMATIC-A/B
LINE SUPPLY
SLV-9D-08-3215F
TUBE ASSEMBLY-LIQUID NITROGEN DUCT

FAR
27-80004-89
71-03 GO/C
841018 ETR
YES
NO

FAILURE MODE-EXTERNAL LEAKAGE AT A WELD WHEN A SPARE ASSEMBLY WAS INSTALLED. TUBE WAS 3/16 INCH TOO LONG. CAUSE-VARIABLE LOCATION OF THE SHROUD FITTINGS SINCE NO LOCATING TOOL EXISTS.

CORRECTIVE ACTION-THE CHANGE BOARD DISAPPROVED DESIGN CHANGES SUGGESTED BY FAR-SLV-9D-3799. DESIGN GROUP WAS DIRECTED TO MONITOR INSTALLATION OF WELD ASSEMBLY ON SLV-3 SCOUTERS 89-1000-17 THRU -23 WHILE USING THE NEW PRODUCTION AID

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
TO LOCATE SIXTH HELIUM BOTTLE. REFERENCE MEMO 682-7-496 DATED 641228.							092142
PNEUMATIC-A/B LINE SUPPLY	SLV-90-08-3214F WELD ASSEMBLY-LIQUID NITROGEN DUCT 27-80004-85	FAR	71-05 641016	60/C ETR	YES NO		092143
FAILURE MODE-STRUCTURAL. RESULTING IN EXTERNAL LEAKS WHICH WERE FOUND AT THE WELD DURING LINE CHECK. CAUSED BY CRACKS AT EDGE OF WELD EXTENDING INTO THE TUBING. THIS RESULTED FROM FATIGUE CAUSED DURING INSTALLATION OR BY WALKING ON DUCT.							
CORRECTIVE ACTION-FAILURE CONFIRMED. THE CHANGE BOARD DISAPPROVED DESIGN CHANGES SUGGESTED BY RAR-SLV-90-08-3799. DESIGN GROUP WERE DIRECTED TO MONITOR INSTALLATION OF WELD ASSEMBLY ON SLV-3 BOOSTERS 89-1600-17 THRU -23 WHILE USING THE NEW PRODUCTION AID TO LOCATE THE SIXTH HELIUM BOTTLE. REFERENCE MEMO 682-7-496 DATED 641228. PROTECTIVE COVERS ARE TO BE OVER THE ASSEMBLIES BEFORE WORKING ON THEM PER CORRECTIVE ACTION MEMO DATED 641229.							
PNEUMATIC-A/B LINE SUPPLY	SLV-89-08-3210F WELD ASSEMBLY-LIQUID NITROGEN DUCT 27-80004-85	FAR	7106 641015	60/C FACTORY	YES NO		092141
FAILURE MODE-STRUCTURAL. DUCT CRACKED NEXT TO WELD, EXTENDING THRU DUCT WALL. CRACK RESULTED FROM FATIGUE DUE TO FORCE REQUIRED AT INSTALLATION.							
CORRECTIVE ACTION-FAILURE CONFIRMED. THE CHANGE BOARD DISAPPROVED THE DESIGN CHANGES SUGGESTED BY RAR-SLV-90-08-3799. THE DESIGN GROUP WAS DIRECTED TO MONITOR INSTALLATION OF THE WELD ASSEMBLY ON SLV-3 BOOSTERS 89-1600-17 THRU -23 WHILE USING THE NEW PRODUCTION AID TO LOCATE THE SIXTH HELIUM BOTTLE. REFERENCE MEMO 682-7 DATED 641228.							
PNEUMATIC-A/B LINE SUPPLY	SLV-89-08-3211F WELD ASSEMBLY-LINE DUCT	FAR 27-80004-95	7401 641010	60/C FACTORY	YES NO		092233
FAILURE MODE-STRUCTURAL. A ONE INCH CRACK WAS FOUND ADJACENT TO WELD. CRACKS RESULTED FROM FATIGUE CAUSED BY FORCING, BENDING AND FLEXING AS REQUIRED FOR INSTALLATION, AND ALSO CAUSED BY PERSONNEL WALKING ON THE DUCT ASSEMBLY.							
CORRECTIVE ACTION-CHANGE BOARD DISAPPROVED DESIGN CHANGES SUGGESTED BY RAR SLV-90-08-3799. DESIGN GROUP WAS DIRECTED TO MONITOR INSTALLATION OF WELD ASSEMBLY ON SLV-3 BOOSTERS 89-1600-17 THRU -23 WHILE USING THE NEW PRODUCTION AID TO LOCATE THE SIXTH HELIUM BOTTLE. REFERENCE MEMO 682-7-496 OF DEC 28, 1964. PROTECTIVE COVERS ARE TO BE OVER THE ASSEMBLIES BEFORE WORKING ON THEM, PER CORRECTIVE ACTION MEMO OF DEC 29, 1964.							
PNEUMATIC-A/B LINE SUPPLY	SLV-89-08-3212F WELD ASSEMBLY-LINE DUCT	FAR 27-80004-88	7104 641009	60/C FACTORY	YES NO		
FAILURE MODE-STRUCTURAL. A CRACK 0.6 INCH LONG WAS FOUND ADJACENT TO WELD. CRACK RESULTED FROM FATIGUE CAUSED BY FORCING BENDING AND FLEXING AS REQUIRED FOR INSTALLATION, AND ALSO CAUSED BY PERSONNEL WALKING ON THE DUCT ASSEMBLY.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-CHANGE BOARD DISAPPROVED DESIGN CHANGES SUGGESTED BY PAR 84V-90-08-3789. DESIGN GROUP WAS DIRECTED TO MONITOR INSTALLATION OF WELD ASSEMBLY ON 84V-3 BOOSTERS 89-1600-17 THRU -23 WHILE USING THE NEW PRODUCTION AID TO LOCATE THE SIXTH HELIUM BOTTLE. REFERENCE MEMO 84E-7-496 OF DEC 29, 1984. PROTECTIVE COVERS ARE TO BE OVER THE ASSEMBLIES BEFORE WORKING ON THEM PER CORRECTIVE ACTION MEMO OF DEC 29, 1984.						
PNEUMATIC-A/B LINE SUPPLY	84V-90-08-3204F LIQUID NITROGEN DUCT	PAR 27-60004-85	7113 840787	WTR	YES NO	
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE DUE TO A 1/2 INCH CRACK IN THE WELD. CAUSES WERE THE DESIGN, WALL THICKNESS, LACK OF WELD METAL DUCTILITY AND LOW CYCLE FATIGUE. MINIMUM BENDING REQUIRED FOR ALIGNMENT COULD INITIATE THE CRACK.						
CORRECTIVE ACTION-PER PAR-90-08-3799 THE DESIGN GROUP REVIEWED THE PART. CHANGES WERE SUBMITTED TO CHANGE BOARD ON DEC. 4, 1984 AND DISAPPROVED. DESIGN WAS DIRECTED TO MONITOR THE ASSEMBLY AND INSTALLATION ON BOOSTERS 1600-17 THRU-23 WHILE THE NEW PRODUCTION AID FOR LOCATING THE SIXTH BOTTLE IS BEING USED. PROTECTIVE COVERS FOR THE BOTTLES ARE TO BE USED.						
PNEUMATIC-A/B LINE SUPPLY	60/ABRF64-023L4-702-00-7101 BOOSTER HELIUM BOTTLES	PRF	7101 840480	E-4	NO NO	
FAILURE MODE-OUT OF TOLERANCE. BOTTLES NOT CHILLED TO REQUIRED TEMPERATURE DUE TO INSUFFICIENT LNG IN SHROUD. CAUSE DETERMINED TO BE RESTRICTED FLOW THROUGH LNG FINE LOAD VALVE.						
SYSTEM EFFECT-HIGH TEMPERATURE ENVIRONMENT. HELIUM BOTTLES WERE NOT CHILLED TO REQUIRED TEMPERATURE RESULTING IN INSUFFICIENT HELIUM BEING LOADED.						
VEHICLE EFFECT-NONE. LNG FINE LOAD VALVE OPERATION CAN BE MANUALLY OVERRIDDEN BY THE RAPID LOAD VALVE (IF REQUIRED) UNTIL DESIRED TEMPERATURE IS ACHIEVED.						
CORRECTIVE ACTION-READJUST LNG FINE LOAD VALVE.						
PNEUMATIC-A/B LINE SUPPLY	84V-90-08-2797 TUBE-LIQUID NITROGEN LINE	PAR 27-60004-87	332D 340817	WTR	YES NO	
FAILURE MODE-CONTAMINATED. MD-40 FOUND INSIDE OF LINE. MD 40 CAME FROM HELIUM BOTTLE SHROUD. FLUSH WAS NOT COMPLETELY DRAINED.						
CORRECTIVE ACTION-PER 60/A MEMO DATED 840827, A REQUIREMENT FOR DRIP DRY 16 HOURS AFTER PLUMBING WITH MD40 WAS ADDED TO PLUMBING FOR 27-60004. ACTION WAS IN REPLY TO PAR 84V-90-08-3789.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE OF TIME	SITE TIME OF DAY	PHI OTM	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B LINE SUPPLY	EN-1880/83-402-00-183	FLIGHT	1830 831007	83 48	YES NO	
<p>FAILURE MODE-FAIL DURING OPERATION. LINE RAPID LOAD WAS NOT SATISFACTORILY ACCOMPLISHED DURING THE PRE-LAUNCH OPERATIONS.</p> <p>SYSTEM EFFECT-DEPLETION OF GAS SUPPLY. DUE TO IMPROPER COOLING, AN INSUFFICIENT QUANTITY OF HELIUM WAS LOADED INTO THE BOOSTER HELIUM BOTTLES PROVIDING FOR TANK PRESSURIZATION.</p> <p>VEHICLE EFFECT-LOSS OF VEHICLE INTEGRITY. DUE TO HELIUM DEPLETION, THE TANK PRESSURIZATION SYSTEM BECAME ABNORMAL AT 1.46 SECONDS. THIS WAS FOLLOWED BY IMMEDIATE BURSTHEAD REVERSAL AND MISSILE SELF-DESTRUCTION AT APPROXIMATELY 75.8 SECONDS.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
PNEUMATIC-A/B LINE SUPPLY	SP-90-02-040F LINE VENT DUCT GASKET	FAR 27-78401-7	2010 830829	WTR	YES NO	YES KIRKILL RUBBER NO R
<p>FAILURE MODE-LEAK-EXTERNAL-LINE LEAKED AT OVERBOARD HORN ASSEMBLY AND AT ALL UPSTREAM GASKETS. LEAKAGE IS DUE TO INADEQUATE DESIGN. THE RUBBER GASKETS ARE CUT THRU BY THE SHARP EDGE OF THE MATING FLANGE DURING INITIAL ASSEMBLY, OR WHEN ATTEMPTS WERE MADE TO STOP LEAKAGE BY TIGHTENING THE CONNECTION.</p>						
<p>CORRECTIVE ACTION-(1.) RAR SP-90-02-3608 RECOMMENDED THAT CONNECTIONS BE ALTERED TO PREVENT GASKET DAMAGE, OR EXTENDED INNER DUCT TO REDUCE LINE CONTACT WITH HORN GASKETS. (2.) LINE TRANSFER PRESSURE WAS REDUCED FROM 75 TO 30 PLUS OR MINUS 3 PSIG AND STOPPED LINE FLOW OVER BOARD BECAUSE OF BOIL-OFF. PARAMETER DOCUMENTS 27-86003-1 AND 89-00703-1 ARE BEING REVISED ACCORDINGLY PER AN AVO OF 4/17/84. INSTRUCTIONS WERE SENT TO WTR ON 4/19/84 WHILE THE DRAWING REVISIONS WERE IN PROCESS.</p>						
PNEUMATIC-A/B LINE SUPPLY	SP-90-02-041C HORN ASSEMBLY, LINE VENT DUCT	FAR 27-78401-1	2010 830829	WTR	YES NO	
<p>FAILURE MODE-LEAK-EXTERNAL-LINE LEAKED AT OVERBOARD DUCT AND HORN ASSEMBLY, AND AT ALL UPSTREAM GASKETS. LEAKAGE IS DUE TO INADEQUATE DESIGN. PRV-0190-BP STATES THAT 280 INSPECTION REPORTS HAVE BEEN WRITTEN IN THE PAST TWO YEARS. PART WAS NOT FAILURE ANALYZED.</p>						
<p>CORRECTIVE ACTION-NONE-PART WAS NOT SENT TO ANALYSIS.</p>						
PNEUMATIC-A/B LINE SUPPLY	SP-90-02-041C GASKET-LINE VENT DUCT	FAR 27-78401-7	2010 830829	WTR		KIRKILL RUBBER R
<p>FAILURE MODE-LEAK-EXTERNAL-LINE LEAKED AT OVERBOARD DUCT, HORN ASSEMBLY AND ALL UPSTREAM GASKETS. LEAKAGE IS DUE TO INADEQUATE DESIGN. PRV-0190-BP STATES THAT 280 INSPECTION REPORTS HAVE BEEN WRITTEN IN THE PAST TWO YEARS. THIS PART</p>						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRE OTM	VENDOR NAME VENDOR PART NO	
WAS NOT FAILURE ANALYZED.							039321
CORRECTIVE ACTION-NONE-PART WAS NOT RECEIVED FOR ANALYSIS. FAILURE ANALYSIS CANCELLED.							
PNEUMATIC-A/B LINE SUPPLY	SP-90-02-041C DUCT-LINE VENT	FAR 27-78384-1	2010 830629	WTR	YES NO	KIRKILL RUBBE R	099320
FAILURE MODE-LEAK-EXTERNAL-LINE LEAKED AT OVERBOARD DUCT AND HORN ASSEMBLY AND AT ALL UPSTREAM GASKETS. LEAKAGE IS DUE TO INADEQUATE DESIGN. PRV-0190-SP STATES THAT 230 INSPECTION REPORTS HAVE BEEN WRITTEN IN THE PAST TWO YEARS. PART WAS NOT FAILURE ANALYZED.							
CORRECTIVE ACTION-NONE-PART WAS NOT FAILURE ANALYSIS.							
PNEUMATIC-A/B LINE SUPPLY	SP-90-02-040F LINE VENT DUCT GASKET	FAR 27-78403-9	2010 830629	WTR	YES NO	KIRKILL RUBBE R	099294
FAILURE MODE-LEAK-EXTERNAL-LINE LEAKED AT OVERBOARD HORN ASSEMBLY AND AT ALL UPSTREAM GASKETS. LEAKAGE IS DUE TO INADEQUATE DESIGN. THE RUBBER GASKETS ARE CUT THRU BY THE SHARP EDGE OF THE MATING FLANGE DURING INITIAL ASSEMBLY, OR WHEN ATTEMPTS WERE MADE TO STOP LEAKAGE BY TIGHTENING THE CONNECTION.							
CORRECTIVE ACTION-(1.) RAR SP-90-02-3606 RECOMMENDED THAT CONNECTIONS BE ALTERED TO PREVENT GASKET DAMAGE, OR EXTEND INNER DUCT TO REDUCE LINE CONTACT WITH HORN GASKETS. (2.) LINE TRANSFER PRESSURE WAS REDUCED FROM 75 TO 30 PLUS OR MINUS 3 PSIG AND STOPPED LINE FLOW OVER BOARD BECAUSE OF BOIL-OFF. PARAMETER DOCUMENTS 27-86003-1 AND 89-00703-1 ARE BEING REVISED ACCORDINGLY PER AN AWO OF 4/17/84. INSTRUCTIONS WERE SENT TO WTR ON 4/18/84 WHILE THE DRAWING REVISIONS WERE IN PROCESS.							
PNEUMATIC-A/B LINE SUPPLY	SP-90-02-040F LINE VENT DUCT GASKET	FAR 27-78403-7	2010 830629	WTR	YES NO	KIRKILL RUBBE R	099293
FAILURE MODE-LEAK-EXTERNAL-LINE LEAKED AT OVERBOARD HORN ASSEMBLY AND AT ALL UPSTREAM GASKETS. LEAKAGE IS DUE TO INADEQUATE DESIGN. THE RUBBER GASKETS ARE CUT THRU BY THE SHARP EDGE OF THE MATING FLANGE DURING INITIAL ASSEMBLY, OR WHEN ATTEMPTS WERE MADE TO STOP LEAKAGE BY TIGHTENING THE CONNECTION.							
CORRECTIVE ACTION-(1.) RAR SP-90-02-3606 RECOMMENDED THAT CONNECTIONS BE ALTERED TO PREVENT GASKET DAMAGE, OR EXTEND INNER DUCT TO REDUCE LINE CONTACT WITH HORN GASKETS. (2.) LINE TRANSFER PRESSURE WAS REDUCED FROM 75 TO 30 PLUS OR MINUS 3 PSIG AND STOPPED LINE FLOW OVER BOARD BECAUSE OF BOIL-OFF. PARAMETER DOCUMENTS 27-86003-1 AND 89-00703-1 ARE BEING REVISED ACCORDINGLY PER AN AWO OF 4/17/84. INSTRUCTIONS WERE SENT TO WTR ON 4/18/84 WHILE THE DRAWING REVISIONS WERE IN PROCESS.							

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTM	VENDOR NAME VENDOR PART NO	
PNEUMATIC-A/B LINE SUPPLY	A0103-0017/02-401-00-39 LINE RISEOFF DISCONNECT	FLIGHT	39D 030103	02 -00	YES NO		001320
FAILURE MODE-LEAK EXTERNAL. THE LINE CONNECTION TO THE FILL AND DRAIN LINE TO THE BOOSTER HELIUM BOTTLE IS SUSPECTED TO HAVE BEEN LEAKING SLIGHTLY, AND TO HAVE FROZEN THE BEND LINE TO THE TRANSDUCER FOR TLM MEASUREMENT H03P.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
PNEUMATIC-A/B LINE SUPPLY	N2-A9-08-3086F SHROUD /33T, HELIUM BOTTLE	FAR 27-00031-503	193D 021210	FACTORY	YES NO		001750
FAILURE MODE-STRUCTURAL. THE 27-00237-1 PART LEAKED AT THE VENT PORT CONNECTION AT 5 PSIG, CAUSED BY POOR WELDING. THERE WERE SKIPS OR LACK OF OVERLAP IN THE BEAMWELD AROUND THE PORT.							
CORRECTIVE ACTION-FAILURE CONFIRMED. PAR N2-A9-08-3086 DATED 030221 REQUESTED BETTER SURVEILLANCE OF WELDING TECHNIQUE TO ASSURE 100 PERCENT WELD CONTINUITY. AS OF DATE 030410, PERSONNEL IN ASSEMBLY AND INSPECTION WERE NOTIFIED OF THIS PROBLEM, AND PROPER TECHNIQUES WERE EMPHASIZED.							
PNEUMATIC-A/B LINE SUPPLY	A-9H-08-3086F BELLON, HELIUM BOTTLE SHROUD CONN 27-08103-7 ECT	FAR 41F 020720	41F 020720	ALTUS	YES NO	PARTS ENGINEER ING 0-02-00070	001491
FAILURE MODE-EXTERNAL LEAK BELLON LEAKED LIQUID NITROGEN AT ROOT OF CONVOLUTION. CAUSED BY CHEMICAL CORROSION FROM AN UNKNOWN SOURCE.							
PNEUMATIC-A/B LINE SUPPLY	A-9H-08-3087F BELLON, HELIUM BOTTLE SHROUD CONN 27-08103-7 ECT	FAR 41F 020720	41F 020720	ALTUS	NO YES	PARTS ENGINEER ING 0-02-00070	001492
FAILURE MODE-LEAK-EXTERNAL. BELLON LEAKED LIQUID NITROGEN. ANALYSIS DID NOT REVEAL ANY LEAKAGE.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION TAKEN SINCE NO FAILURE OCCURRED. SEE FAR A-9H-08-3086 ANALYSIS OF A COMPANION BELLON.							

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PNEUMATIC-A/B LINE SUPPLY	AAB2-0071/P2-402-00-148 LINE SHROUD	COUNTDOWN	143D 020722	12 -0100	YES NO	099640
FAILURE MODE-LEAK-EXTERNAL. SLIGHT LINE LEAK WAS OBSERVED IN THE THRUST SECTION.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE. NO HOLD INITIATED.						
CORRECTIVE ACTION-NONE.						
PNEUMATIC-A/B LINE SUPPLY	HG-18-08-300SF HELIUM BOTTLE AND SHROUD ASSEMBLY	FAR 27-90031-31	020600	ETR	YES NO	090410
FAILURE MODE-EXTERNAL LEAKAGE. LIQUID NITROGEN LEAKAGE THRU SHROUD WHERE A CRACK HAD BEEN WELDED. LEAK RATE WAS 60 DROPS/MINUTE. CAUSE NOT KNOWN-COULD HAVE BEEN ONE OF THE FITTINGS OR THE GASKET TO THE SHROUD. THESE FITTINGS WERE NOT AVAILABLE FOR ANALYSIS.						
CORRECTIVE ACTION - FAILURE NOT CONFIRMED. THE HELIUM BOTTLE AND SHROUD ASSEMBLY WAS PUT UNDER SURVEILLANCE BY RELIABILITY CONTROL ENGINEERING, NO FURTHER ACTION.						
PNEUMATIC-A/B LINE SUPPLY	AAB2-0037/P2-401-00-133 LINE DUCT	COUNTDOWN	1330 020403	12 -2000	YES NO	099717
FAILURE MODE-LEAK EXTERNAL.						
SYSTEM EFFECT-POSSIBLE DEPLETION OF LIQUID SUPPLY.						
VEHICLE EFFECT-NONE. NO HOLD CALLED AS A RESULT OF THIS LEAKAGE.						
CORRECTIVE ACTION-NONE. LEAKAGE WAS DETERMINED TO BE ACCEPTABLE FOR FLIGHT. (MISSILE 1330 HISTORY, REPORT AAB2-0030).						
PNEUMATIC-A/B LINE SUPPLY	AAB2-0130/P2-400-01-33 LINE FILL AND DRAIN MANIFOLD	COMPOSITE-FRD/OPL	990 000401	12	YES NO	
FAILURE MODE-LEAK-EXTERNAL. DURING FLIGHT READINESS DEMONSTRATION, LINE WAS SEEN DRIPPING FROM THE THRUST SECTION. DISCOVERED THAT THE WELDS ON THE LINE FILL AND DRAIN MANIFOLD WERE LEAKING. THIS MANIFOLD WAS A REPLACEMENT PART FOR ONE THAT HAD LEAKED LINE DURING AN EARLIER TEST.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						

GENERAL DYNAMICS
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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-ZINC CHROMATE PASTE WAS COATED OVER THE WELDS TO STOP THE LEAKS.							993992
PNEUMATIC-A/B LINE SUPPLY	9A-06-113 COUPLING ASSY-HELIUM PRESSURE, O-R 7-08226-001 ING	FAR	390900	EDWARDS	YES	ROBERTSHAW FUL NO TON	997933
FAILURE MODE-LEAKAGE AT 75 TO 100 CC/MIN. AT 1000 PSI CAUSED BY A BURR AND NICKS ON THE A/B PROBE, ALSO PACKING O-R ING AND BACKUP RINGS ON GROUND VALVE WAS DAMAGED DURING ASSY AND HAD CONTAMINATION OF INTERNAL AND EXTERNAL SURFACES							
CORRECTIVE ACTION-NO DESIGN CHANGES, QUALITY CONTROL MONITOR ASSEMBLY PROCEDURE TO ASSURE PROPER INSTALLATION OF O- RINGS AND BACKUP RINGS.							
PNEUMATIC-A/B LINE SUPPLY	9A-08-113 COUPLING ASSY - HELIUM PRESSURE, O 7-08223-9 -RING	FAR	590900	EDWARDS	YES	ROBERTSHAW FUL NO TON	997934
FAILURE MODE - LEAKAGE AT 75 TO 100 CC/MIN. AT 1000 PSI CAUSED BY A BURR AND NICKS ON THE A/B PROBE, ALSO PACKING O -RING AND BACKUP RINGS ON GROUND VLV. WAS DAMAGED DURING ASSY., AND CONTAMINATION OF INTERNAL AND EXTERNAL SURFACES.							
CORRECTIVE ACTION-NO DESIGN CHANGES, QUALITY CONTROL TO MONITOR ASSEMBLY PROCEDURE TO ASSURE PROPER INSTALLATION OF O-RINGS AND BACKUP RINGS.							
PNEUMATIC-A/B LINE SUPPLY	9D-08-125 LINE RINGOFF DISCONNECT, SEAL	FAR 27-80279-3	27D 590900	WTR	YES NO	60/C	998463
FAILURE MODE-STRUCTURAL. REJECTED DUE TO SEVERE SCORING DUE TO SEAL RETAINING WASHER NOT HAVING SUFFICIENT CLEARANCE E IN THE ASSEMBLED POSITION-VENT SLOTS NOT PROPERLY BURRED AND DEL-7 SEAL WAS HARD.							
CORRECTIVE ACTION-ACTION WAS INITIATED TO CORRECT CLEARANCE, BURNING AND SEAL DISCREPANCIES. BLUEPRINT DISCREPANCIE S CORRECTED.							
PNEUMATIC-A/B LINE SUPPLY	9D-08-125 LINE RINGOFF DISCONNECT, SEAL	FAR 27-80279-3	27D 590900	WTR	YES NO	60/C	
FAILURE MODE-STRUCTURAL. REJECTED DUE TO SEVERE SCORING DUE TO SEAL RETAINING WASHER NOT HAVING SUFFICIENT CLEARANCE C IN THE ASSEMBLED POSITION-VENT SLOTS NOT PROPERLY BURRED AND DEL-7 SEAL WAS HARD.							
CORRECTIVE ACTION-ACTION WAS INITIATED TO CORRECT CLEARANCE, BURNING AND SEAL DISCREPANCIES. BLUEPRINT DISCREPANCIE							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE	SITE	PRJ	VENDOR NAME
9A8-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE DIP	TIME DIP	OTM	VENDOR PART NO
3 CORRECTED.						098494
PNEUMATIC-A/B LINE SUPPLY	FT142866/P9-202-00-08	COUNTDOWN	68 580910	13 -3300		091415
FAILURE MODE-FAILED DURING OPERATION. LOST BOOSTER TANKS LINE SHROUD HIGH FILL PROBE DURING HELIUM CHILLODOWN.						
SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. LOSS OF PROBE RESULTED IN LOSS OF CONFIDENCE THAT LINE SUPPLY WOULD BE ADEQUATE TO SUPPORT LAUNCH.						
VEHICLE EFFECT-COUNTDOWN DELAYED. 15 MINUTE HOLD.						
CORRECTIVE ACTION-REPLACE PARTIALLY FULL LINE TRAILER WITH FULL TRAILER TO ENSURE ADEQUATE LINE SUPPLY.						
PNEUMATIC-A/B LINE SUPPLY	FT14002/P1-201-00-3 LINE SHROUD	PNP	38 580910	11 -4200	YES NO	093344
FAILURE MODE-LEAK-EXTERNAL. THE BOOSTER LINE SHROUD HAD RUPTURED.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-COUNTDOWN ABORTED.						
CORRECTIVE ACTION-UNKNOWN.						
PNEUMATIC-A/B BOOSTER SECTION	AQJ63-0048/81-401-00-46 RISE-OFF DISCONNECT HEAT SHIELD	FLIGHT	460 830315	B-1	NO YES	098418
FAILURE MODE-FAIL DURING OPERATION. THE RISE-OFF DISCONNECT RUPTURED AT 83.5 SECONDS DUE TO LOSS OF THE RISE-OFF DISCONNECT HEAT SHIELD AT LIFT-OFF.						
SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. RUPTURE OF THE RISE-OFF DISCONNECT CAUSED THE LOSS OF HYDRAULIC FLUID FROM THE SYSTEM, THEREFORE HYDRAULIC PRESSURE WAS LOST.						
VEHICLE EFFECT-LOSS OF VEHICLE STABILITY. LOSS OF HYDRAULIC PRESSURE RESULTED IN SUSTAINER AND VERNIER SHUTDOWN, WHICH LED TO VEHICLE INSTABILITY AFTER BOOSTER CUT-OFF. THE VEHICLE SELF-DESTRUCTED.						
CORRECTIVE ACTION-REDESIGN RISE-OFF DISCONNECT PANEL TO PRECLUDE LOSS OF SHIELD. INTERIM REDESIGN WAS MADE BY AGAN A. SOC REDESIGN, AS INCORPORATED ON LV AND SLV WAS FINALLY INCORPORATED AS PART OF THE CHALK-TALK CONFIGURATION.						

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DIFFICULTIES REVIEW-PNEUMATIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE		SITE TIME DIP	PRI OTH	VENDOR NAME	
			DATE DIP	DIP			VENDOR PART NO	